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October 11, 1971

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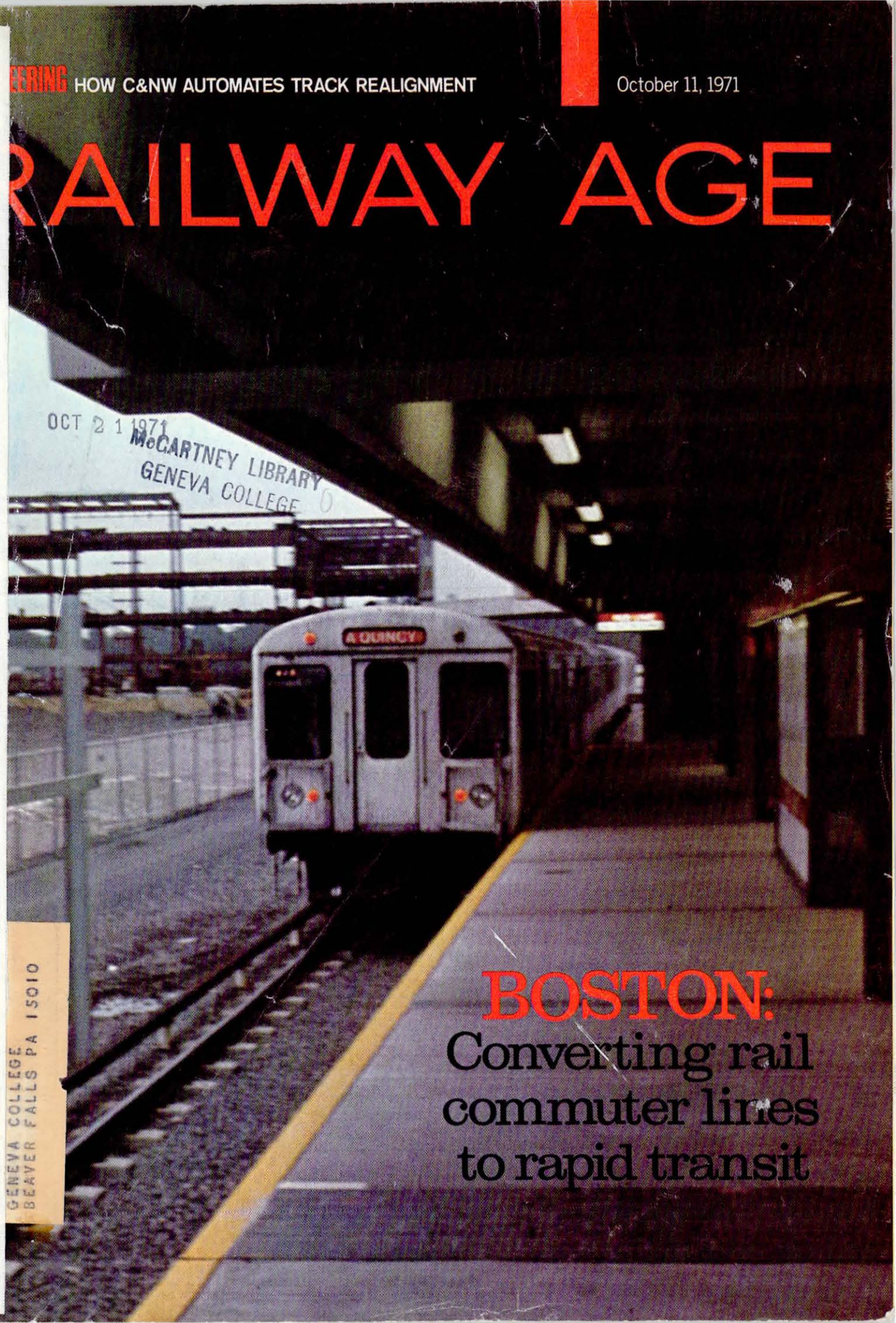


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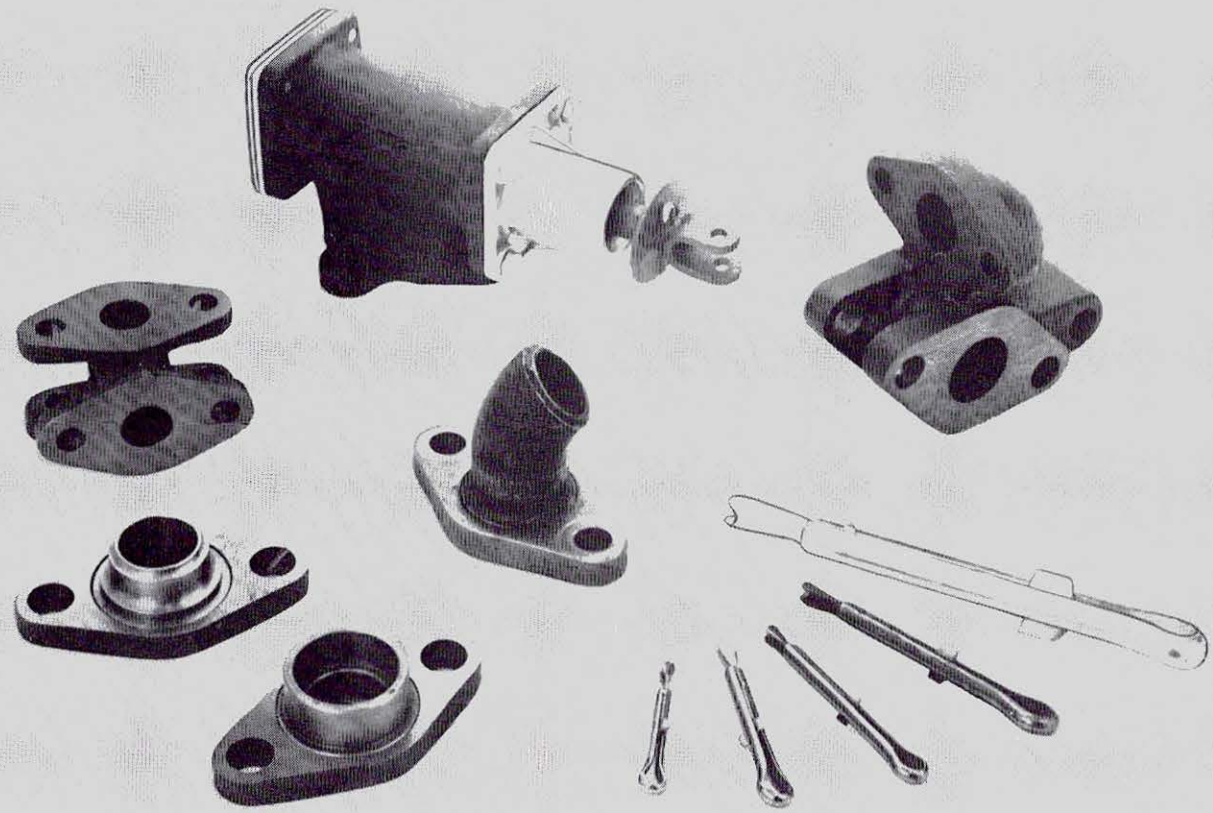

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October 11, 1971 • Vol. 171 No. 7

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# Inside

LUTHER MILLER

## THE TRANSPO STORY

Sit down for an hour or so with Transpo '72 managing director Chester Spurgeon, as we did on a recent rainy Saturday morning in Washington; hear him enthusiastically describe the "whole new city" which is being built at Dulles International Airport to accommodate this exposition and the 1,000,000 people who are expected to swarm over its 300 acres of grounds next year; absorb some feeling for the immensely complicated logistical planning that must go into an enterprise of this magnitude—and you come away with the impression that the generalship of Transpo is in very competent hands indeed. But while not doubting the importance of Transpo to America's aerospace industry in its search for wider world markets, you cannot help but wonder if this will be the best possible place for railroads and railroad suppliers to invest their own time and money.

Some of the questions that railroad men and railroad suppliers are asking about Transpo, and some of the answers Transpo is supplying, are reported on p. 22.

At the outset, Transpo planners made some basic mistakes which railroad men find it hard to forgive and forget. The original 15-minute slide show promoting Transpo made no mention of rail freight—although rail freight is a $12-billion-a-year industry. A big reception in Washington designed to promote Transpo failed to include key railway men on its guest list, which the aerospace industry drew up.

Is it any wonder that many people continue to view Transpo as fundamentally an air show, which is what it set out to be in the first place?

## MOVING PEOPLE

In releasing the final report of the Northeast Corridor Transportation Project, which called for a $460-million high-speed rail program (RA, Sept. 27, p. 12), DOT Secretary John A. Volpe emphasized that "the need is to make more effective use of existing transportation systems' capacity rather than introducing new technology systems . . . ." If he really means that, Secretary Volpe must be especially pleased with what is going on these days in his old stamping grounds. In the article beginning on p. 18, Mechanical Editor Fred Houser describes how Boston is making very effective use of old commuter lines by turning them into new rail-transit lines. . . . Amtrak, which also inherited an existing system, is not, so far, doing very well with it. Some of Amtrak's troubles, and how Amtrak is going about resolving them, are related on p. 48. As the Wall Street Journal commented Oct. 4, Amtrak's appeal to Congress for an emergency transfusion of $170 million "will begin to make clear to the public that the railroad weren't kidding when the claimed to be losing staggering sums on passenger service."

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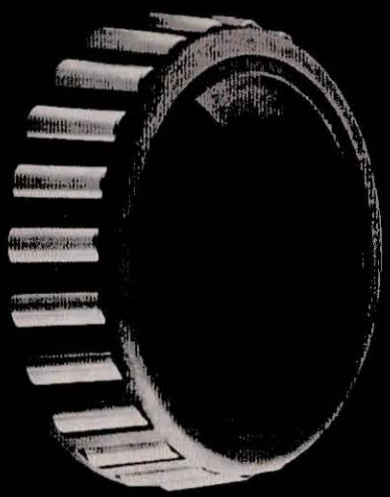
BART, San Francisco Bay Area Transportation, is more than a rapid transit. It is a transportation system that will open up employment and educational opportunities to underprivileged communities by providing greater mobility for citizens of isolated areas. BART cars are the most advanced rapid transit cars in the world... light, high-speed, low-maintenance... built by Rohr Corporation with Rockwell trucks and using the most modern tapered roller bearings available today... BRENCO.



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# RAILWAY AGE

October 11, 1971

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## COVER

The color photograph on this issue's cover, taken by Railway Age Art Director Maurice Mates, shows Pullman-built equipment now in service on Boston's South Shore new transit extension.

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# Short and Significant

### GM TO GET 50 "COCOON" CARS

The "cocoon" method of shipping automobiles—loading them in containers stacked three-high on low-level flat cars—has shown "excellent results," says Milford Barron of General Motors' logistics operations department. Four cars have been used in tests; 50 more are expected for GM use by the end of the year. Also getting high marks from GM in the damage-prevention area is operation of the 183-car Vert-a-Pac fleet; an additional 139 Vert-a-Pacs may soon be ordered.

### ILLINOIS COURT OKAYS BOND ISSUE

A $900-million transportation bond issue passed by the Illinois Legislature has been ruled constitutionally sound by the State Supreme Court. Included is the initial phase of a 1,950-mile supplementary freeway system that will take $600 million; $200 million for mass transportation, of which most will go to the Chicago Transit Authority for capital improvements; and $100 million for airport development.

### MECHANICAL DIVISION WASHINGTON-BOUND?

The AAR Mechanical Division, which has known no home other than Chicago in its 104-year history, is reported to be ready to move to Washington. The transfer, said to be opposed by several railroad chief mechanical officers, may take place around the first of next year. F.A. Danahy, who was named executive vice chairman of the Mechanical Division Aug. 1, 1970, is now headquartered in Washington although the bulk of his staff is in Chicago.

### HARTKE LEANS TOWARD FASTCOR BILL

In the view of Senator Vance Hartke (D.-Ind.), the best of the three freight-car bills now at the hearing stage is S. 1729. That bill would create a $3-billion government-controlled corporation, Fastcor, to acquire and maintain a fleet of general-service cars. It has the support of labor organizations. As for S. 1731, the bill favored by railroads and most shippers, Hartke told a transportation symposium in Atlantic City, N.J., that he sees "grave problems inherent in the subsidy approach." S. 1731 would have the Federal government insure individual-railroad loans up to $3 billion for equipment purchases. The third bill under consideration is S. 1730. It would create the National Freight Car Corp. to maintain a fleet of general service cars to alleviate shortages; it is supported by the railroads as a companion to S. 1730. At the Atlantic City symposium, which was sponsored by the National Association of Regulatory Utility Commissioners, Hartke voiced general distrust of transportation subsidies.

### ICI LOSES ONE, TRIES FOR ANOTHER

Illinois Central Industries, in another burst of merger activity, said it had reached temporary agreement to acquire Lincoln Consolidated Inc., a life insurance, saving and loan, and real estate holding company in Houston, through a $30.1-million stock swap. Simultaneously, ICI called off merger negotiations with Interstate Brands Corp., Kansas City, after Interstate's board disapproved a $68.5-million stock exchange. ICI last month completed acquisition of Dad's Root Beer Co. of Chicago for $6 million and pressed plans to acquire Midas-International Corp. for $75 million.

### WHY FREIGHT-CAR ORDERS ARE DOWN

Only 1,211 new freight cars were ordered in August, compared with 3,807 in July and 2,148 in August 1970. Apparently buyers were waiting to see if, when and precisely how Congress will reinstate the investment tax credit. Carbuilders received inquiries for several thousand new cars immediately after President Nixon said he would seek restoration of the tax credit; most of these inquiries will not be translated into orders until Congress acts. This action could come as early as November, say Washington observers. The House Ways and Means Committee is backing a 7% tax credit; as it now stands, railroads would have the option of taking either the tax credit or keeping the fast-amortization that became effective last year.

### SOUTHERN WINS ROUND IN BARGE PLEA

Southern Railway got a green light from an ICC examiner Oct. 1 to go ahead with plans to carry coal by barge to utility plants in the south, the first time any railroad has received such authority. Under the plan, filed with ICC a year ago, a wholly-owned Southern subsidiary — Southern Region Coal Transport, Inc.—will carry coal 230 miles by barge from Peabody Coal Co. docks in Shawneetown, Ill., to Sheffield, Ala., on the Ohio and Tennessee rivers for forwarding via rail to the power plants. Water carriers vigorously opposed the plan, which must be approved by the full Commission.

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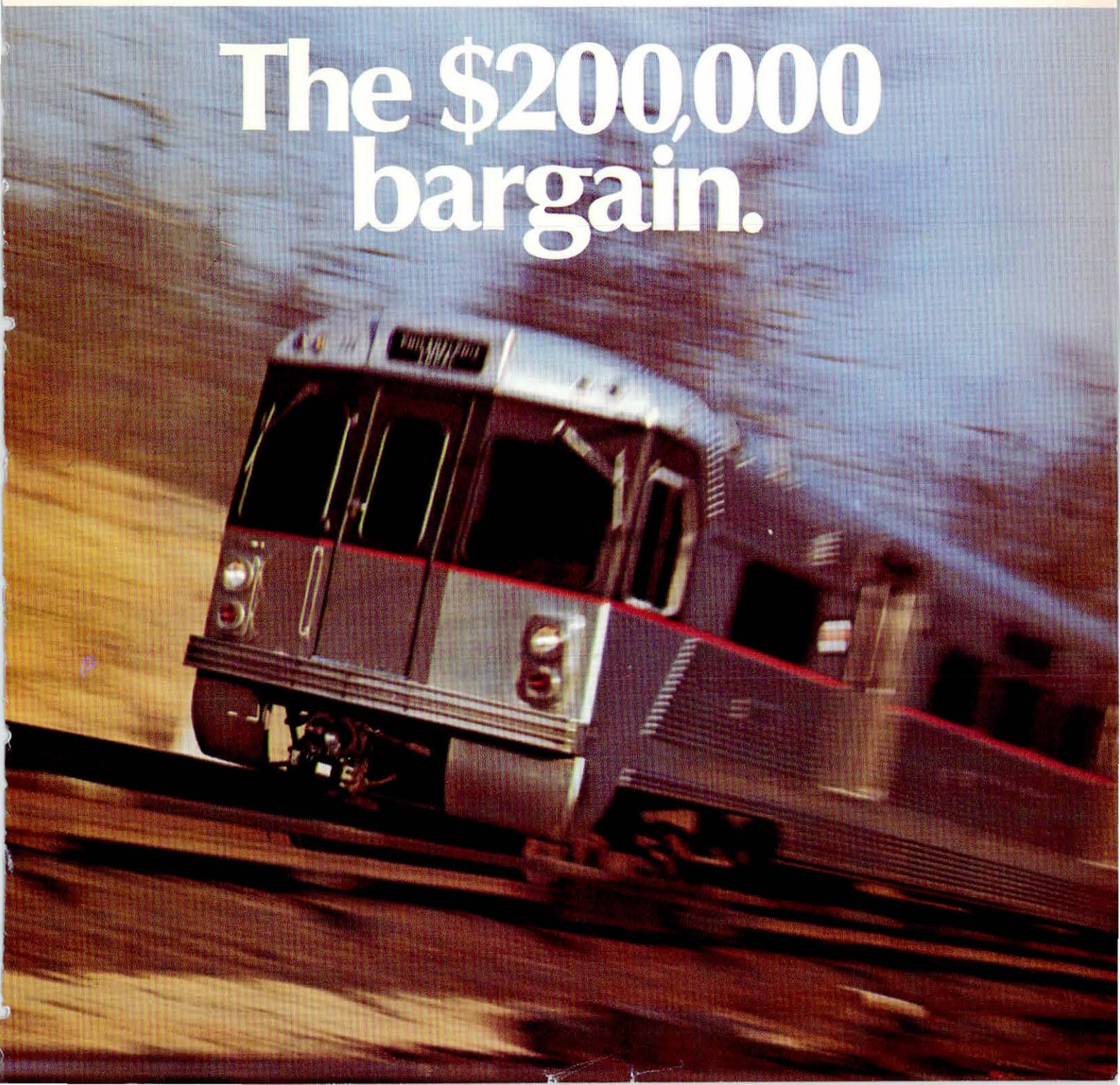

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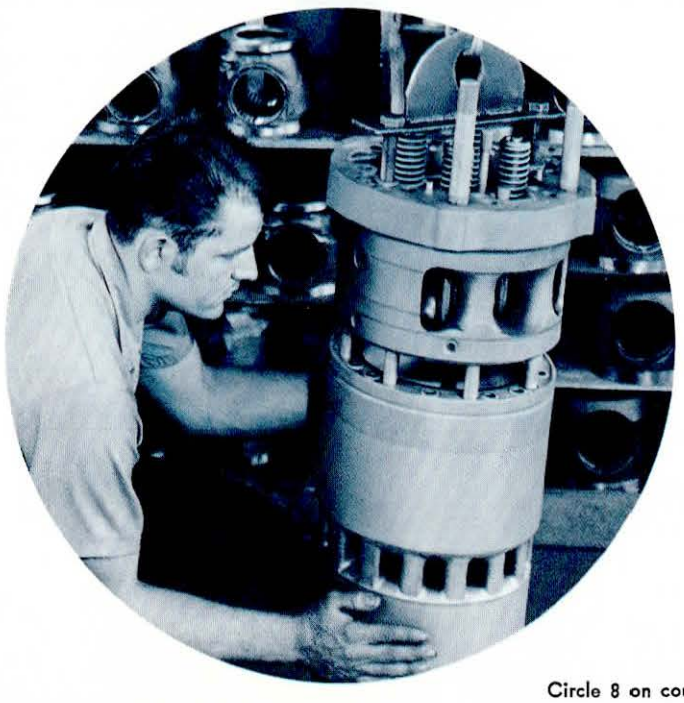

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RAILWAY AGE
NEWS

## FOR IRON ORE PELLETS:

# Unit trains seen as huge cost-cutters for steel industry

Savings of over $585 million in capital investments in equipment, plus another $83 million a year in operating costs, are now within the grasp of financially pressed U.S. steelmakers. More extensive use of the unit train concept for transporting iron ore in pellet form from Minnesota's rich Missabi Range deposits to mills in the Chicago-Gary and Pittsburgh areas could generate these kinds of savings, says J. D. Sward, transportation systems specialist, Pullman Inc.

Currently, pellets are being handled via a coordinated railroad-ore boat system that was developed back before 1920, Sward told members of the Association of Iron and Steel Engineers at their annual meeting in Chicago. Back 50 years ago, he continued, such a system was the best available to the steel companies. Now, however, more powerful locomotives and advanced designs of freight cars, along with other technological improvements, have come along to make the unit train a strong competitor of other transportation systems.

This is a critical period for the nation's steelmakers, Sward added, what with foreign competition, increasing wage demands at home, obsolete steelmaking equipment in some cases, not to mention tight money, making it extremely important for these companies to find economic relief someplace. A more viable transportation system for hauling pellets can go a long way toward improving the profit picture.

Much of the coordinated system's fleet of locomotives, freight cars and ore boats is due for replacement now, Sward noted. The capital investment represented here is almost $755 million. By converting over to an all-rail unit train concept that would cost $169 million, according to Sward's estimates, a savings of over $585 million in equipment could be realized.

Aside from requiring a lower capital investment, the unit train concept could do a much more efficient, yet less costly, transportation job than is possible with the coordinated system using the Great Lakes ore boats, Sward continued. The all-rail system could cut down on four major expense items:

—Railroad freight rates and boat costs from source to final destination;

—Loading and unloading charges for both the freight cars and the vessels;

—All facets of material handling at the ore and pellet source;

—Winter inventory costs at both source and destination.

Altogether, operating savings would amount to anywhere from $2.06 to $2.82 per gross ton destined for Chicago Gary-ports, and even more—$3.94 to $4.69 per ton—on deliveries to Pittsburgh mills. "Unit train cost on a ton-mile basis," said Sward, "is less than half the cost of operating a conventional train." Profits, on the other hand, average 20% on revenue, compared to less than 8% for conventional trains. "In substance, a railroad can reduce the rate with a unit train and still double its profits," he added.

> Savings could add up to hundreds of millions of dollars

Some of the other costs which could be avoided altogether by switching to unit trains are: 15 cents per gross ton in winter inventory carrying costs at the pellet plant; up to 61 cents per gross ton at Chicago-Gary and 72 cents at Pittsburgh in inventory carrying costs at destination; and four cents per gross ton to cover unloading, stockpiling, storage and reclamation.

The unit train concept, its economical advantages notwithstanding, still has some problems to overcome before it could become a vital part of the steelmakers' raw materials distribution network, Sward cautioned AISE members. For one thing, the rate would have to be structured to benefit all the roads involved in the movement of the trains. Also, many steel plants would have to completely overhaul their storage and in-plant materials handling systems to accommodate an all-rail operation. Many facilities would have to expand their in-plant rail system and some would have to design all new unloading facilities to permit the intensive equipment utilizaton that does so much to make unit train operation attractive.

Many steel companies are now attempting to improve the most efficient aspect of their transportation system—the ore boats, which may cost as high as $40 million with finance charges added. Perhaps what they should be doing, concluded Sward, is taking "the opportunity to utilize an alternate means which would be even more efficient and result in substantial savings, with the added bonus of avoiding a high capital investment in seagoing vessels and materials handling facilities.

# Rock Island starts a new TOFC train

The piggyback business is not all that good this year—but that is not stopping Rock Island from putting on a new train for TOFC from Chicago, the Twin Cities, St. Louis and Kansas City to Texas points. RI's CTX—for Chicago-Texas-Express—departs Chicago at 8:30 p.m. Monday through Saturday. Piggyback from the Twin Cities, St. Louis and the Kansas City area is cut in at Kansas City, from where the train is scheduled to run without additional pickups or setouts to Forth Worth. Under the new schedule, TOFC from Chicago and St. Louis will arrive second morning in Fort Worth and Dallas (third morning for Twin Cities traffic).

# The ACI Scanner

Virtually every industry can take advantage of the benefits offered by ACIS technology.

One interesting case in point is found in the paper industry where many progressive new production methods are being introduced. We recently contracted to install an ACI Systems Corp. Scanner-Scale System for one of the nation's leading paper companies.

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It's just one example of the many breakthroughs made possible by the trackside mini-computer capabilities of ACIS Scanners. Let's talk over *your* operating and control problems: A cost-saving ACIS installation could be the answer!

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Circle 9 on coupon page 27


# Busy days on the Chicago transit scene

Over the past few weeks, you really needed a scorecard to keep up with what was going on in urban mass transportation, Chicago-style. Among the major developments:

—Chicago Transit Authority unveiled a $277-million, five-year capital needs program which would include purchase of 100 air-conditioned rapid-transit cars at an estimated cost of $22,230,000.

—Illinois Gov. Richard B. Ogilvie made the first move toward organization of a state DOT, and indicated that about $3 billion may be spent for major improvement of transportation systems (including highways) over the next four years.

—HUD and DOT said that additional Federal monies, adding up to $6.7 million, would be made available for area projects involving Illinois Central and CTA.

—Chicago & North Western President Larry S. Provo made another plea for coordinated mass-transportation planning to replace the piecemeal approach which has characterized much of the area's planning to date.

CTA's five-year program would include a $121.7-million first step—divided $70.1 million for passenger comfort, $22.2 million for passenger safety, $14 million for operational improvements, $9.4 million for passenger convenience and $6 million for neighborhood improvements. Largest single item would be $47.4 million for purchase of 1,000 air-conditioned buses.

Other major outlays (in addition to the new transit cars) would be for installation of cab signals, $11.6 million; track renewal, $7.4 million; elevated-structure renewal, $2.9 million; and construction of three car-maintenance facilities, $1.9 million.

CTA said its program "is designed to stop the decline in the physical condition and usefulness of equipment and facilities which has resulted from inability, over a long period of time, to generate from acceptable fare levels the funds needed for renewals . . . Recent legislation, both state and Federal, makes it financially feasible to begin the first step of a journey to a completely modern system by 1990."

Meanwhile, Gov. Ogilvie was also taking a first step—by naming a 12-member task force to advise on the organization of the state DOT, which will become a functioning agency Jan. 1. Heading the task force will be John E. Robson, former undersecretary of the Federal DOT. Among the task force members: Alan S. Boyd, president of Illinois Central and DOT's first secretary.

Meanwhile, too, C&NW's Provo was worrying about fragmented planning—and asking North Western's 40,000 commuters for their support. The problem, he said, "is that we (C&NW) will in the very near future be surrounded by subsidized mass transportation performed by other carriers (including expressways). Although up to this time we have been holding our own, we are keenly aware that no privately-operated mass-transit service can for very long compete with subsidized forms."

North Western, Provo pointed out, could try to qualify for aid through formation of transit districts—a route which other Chicago-area railroads have taken. But, he noted, "such transit districts would find it difficult to obtain or justify financial aid for the North Western unless we operated at a loss. To state the matter bluntly, the 'mass transit district' route offers no permanent solution."

What North Western wants—and what all Chicago-area roads asked for last year (RA, Oct. 12, 1970, p. 12)—is coordination under a single mass-transportation agency.

There is some question as to the political feasibility of such a proposal. But, Provo declared, "Only by adopting the single-agency concept can we ever hope to solve the various elements in our mass-transportation problem on a priority basis, doing the most essential things (and not necessarily the most popular) first. Only when responsibility is centered in one agency can we hope for improvements to some forms of transport without in the process needlessly wrecking or weakening other needed mass-transit lines in the metropolitan area."

His conclusion: "Time is running out."

# Canada unveils the LRC coach

"Get the bugs out before you try it on the public," cautioned J.W. Pickersgill, president of the Canadian Transport Commission, at last week's introduction of the LRC (lightweight, rapid comfortable) passenger coach as it made demonstration runs out of Ottawa. Developers of the 120-mph car are doing just that with an extensive testing program in cooperation with Canadian National. LRC is a development of Alcan Canada Products; Dominion Foundries & Steel; and MLW Industries. The 85-ft car features hydraulic braking to assure passenger comfort while traversing curves.

## Pennsylvania Co. posts a profit

The Pennsylvania Co., a wholly-owned subsidiary of the bankrupt Penn Central Transportation Co., has reported an unaudited profit of $9,993,000 for the first six months of 1971, on revenues of $117,004,000. President Victor H. Palmieri said that Buckeye Pipe Line and Arvida Corp., both Pennco subsidiaries, continued to operate profitably in the first half. Great Southwest Corp., 82% owned, reported a loss for the first half but is expected to be in the black for the entire year, said Palmieri.

The first-half report was announced simultaneously with the delayed 1970 audit, which showed a consolidated net loss of $246 million. A major loss item was the company's share of the net loss of $143,094,000 reported by Great Southwest, which resulted primarily from write-downs of discontinued operations. Another major item was a previously announced reserve of $126,144,000 established to reflect impairment in the value of the company's investment in Penn Central Transportation Co. A third contributor was an extraordinary loss of $61,471,000 resulting from the write-off of all goodwill associated with Pennsylvania Co.'s interest in Great Southwest and a substantial write-down of goodwill associated with the acquisition of Buckeye Pipe Line.

## UP modernizing its Omaha shops

Union Pacific is about to get under way with Phase 2 of a system program to improve locomotive repair and maintenance operations. Phase 1 was the construction of a new shop at North Platte, Neb., to serve as a component-exchange facility. Phase 2 will be a multi-million-dollar modernization of UP's Omaha shops, which will serve as a component-repair facility supplying rebuilt parts to North Platte and Salt Lake City shops.

Plans call for the complete remodeling and rearrangement-of-facilities of the main machine and boiler shop building and the installation of more than $1.6 million worth of new equipment. Two new buildings will be constructed—a cleaning building and an air-compressor/electrical-control building. Existing cranes in the machine shop will be upgraded and equipped with remote radio control; four new cranes (two 20-ton and two 10-ton) will be installed in the cleaning building.

# Lines on Labor

GUS WELTY

### NRLC: WHAT TO DO, WHAT TO DO?

Any institution created by man is subject to improvement, and the National Railway Labor Conference is no exception. Now the odds seem reasonably good that NRLC will be a somewhat different organization by next spring, when a new chairman takes over—be it Bill Usery, assistant labor secretary and reported leading contender, or somebody else. One option, of course, is to leave NRLC pretty much as-is. But the choice of that option might be more indicative of inability-to-agree than of agreement that no change is advisable. A second possibility would involve a strengthening of the chairman's role, and that might not be a bad idea in itself in view of the relative ease with which UTU President Charles Luna outflanked NRLC this past summer. Still a third option would integrate the industry's bargaining agency with its trade association, a move which might or might not be an improvement. And a fourth possibility? That would be a reorganization of NRLC along functional lines, with less regard for the traditional regional alignment. You can get arguments on both sides, on the question of whether regional organization is any longer valid. In any event, it is intriguing to consider how NRLC might work, with a strong chairman and with its vice-chairman taking charge of specifics—negotiation with the operating crafts, negotiation with the non-ops, and communication (internal and external).

### THE RAILWAY LABOR ACT: WHAT TO DO, WHAT TO DO?

Meanwhile, up on Capitol Hill, Senate and House committees are at least going through the motions of considering change in the Railway Labor Act. Briefly put, the railroads want a "finality" provision enacted, and the unions do not. Cynics find it hard to believe that Congress would dare to "offend" organized labor, with the 1972 election campaign already under way (and with, it sometimes seems, half of the Senate's Democrats running for their party's nomination for President). But rail labor's leaders are playing it straight—and their strategy, of course, is to come on strong with their own bill. Not surprisingly, labor's bill would loot the railroads' arsenal of just about every weapon remaining in their limited store.

Labor's bill would (1) bar railroads from calling a lockout, (2) prohibit non-struck railroads from promulgating their counter-demands, (3) expressly permit the unions to strike selectively, and (4) require struck roads to maintain operations "necessary to the protection of the national safety and health." Interestingly, labor's supporting testimony has not been without apparent contradictions. One witness, for example, says the economic system—based upon the profit motive—makes it almost impossible to choose a panel to decide a management/labor question impartially. Another witness says it is "inherent in our capitalistic system . . . that labor unions will constantly be seeking to improve the living standards of their members," and that there is "no such reason for managements . . . to be constantly pressing for revision of the labor contract."

Obviously, capitalism and the profit system are great, when they work for you. Otherwise. . .

# MOVING PEOPLE

**Baltimore awards design contract**

A design contract for $1,680,000 has been awarded to the joint venture group of Daniel, Mann, Johnson & Mendenhall/Kaiser Engineers to complete preliminary engineering for Phase I of the Baltimore region rapid transit system. The contract is part of a $2.1-million preliminary design program, one-third of which is being funded by the state of Maryland through its Mass Transit Administration, and two-thirds by the Federal Urban Mass Transportation Administration.

**Volpe is ATA's "Man of the Year"**

The American Transit Association has designated DOT Secretary John A. Volpe as "Man of the Year." Volpe, who led the successful fight for passage of the Urban Mass Transportation Act of 1970, received ATA's Jesse L. Haugh Award (which honors a former president of the association) in Dallas, Tex., Oct 4. At its annual convention, ATA elected as its new president Carmack Cochran, president and general counsel of the Nashville (Tenn.) Transit Co. He succeeds Lucien L'Allier, chairman of the Montreal Urban Community Transit Commission.

**Senator criticizes emphasis on "futuristic" hardware**

Senator Philip A. Hart (D.-Mich.) has proposed the creation of a $5-billion quasi-public corporation, similar to Amtrak and Comsat, to oversee transportation research and development. He said the firm could establish priorities and fund development of transport systems according to national needs. Attacking the proliferation of futuristic transport hardware, he said DOT was not giving enough attention to everyday transport problems.

**BART target date: March '72**

Directors of the Bay Area Rapid Transit District (BART) voted Sept. 12 to move the formal opening of the first line of the $1.4-billion, 75-mile system forward from January to March, 1972. As originally conceived the first line was supposed to have opened in 1969. Work on the system was begun in 1964. The delay is due in part to unexpected troubles with the cars which Rohr Corp. is building for BART.

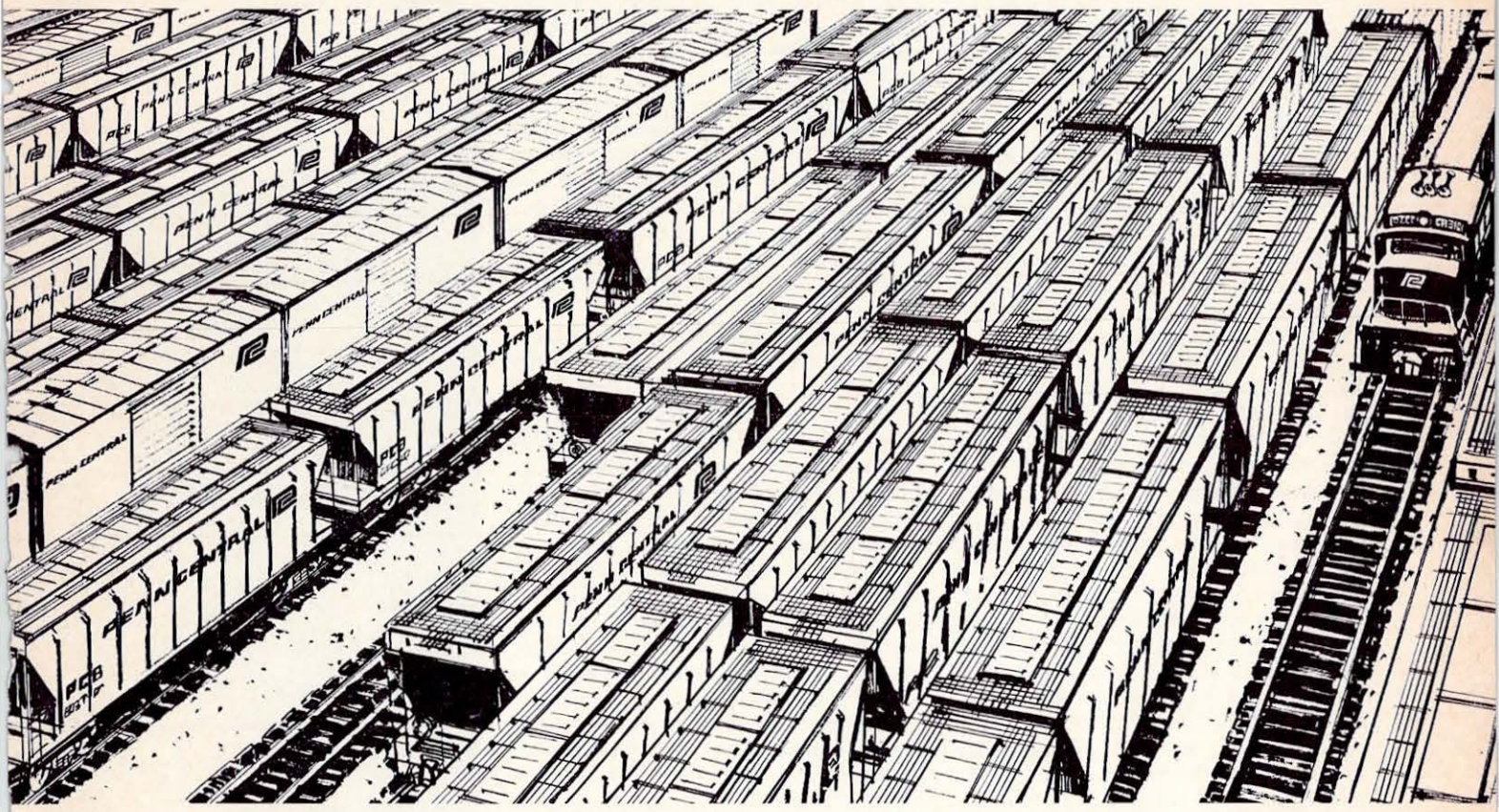
**U.S. and USSR will swap transit information**

DOT and the Soviet Union are near agreement on an exchange of information on rapid transit R&D, including system controls, steel wheel and car design, automatic trains, and futuristic pedestrian-moving hardware. The exchange follows the visit of a high-level Russian delegation to the U. S. last spring, and follows the pattern of other agreements signed with Western countries.

**The battle of Pittsburgh: It isn't over**

DOT Secretary Volpe has announced that his Urban Mass Transportation Administration will give Pittsburgh $60 million toward implementation of its Skybus-oriented transit system. But the battle between Skybus and conventional rail advocates is not over. Mayor Peter F. Flaherty, an opponent of Skybus, has filed suit to prevent transit planners from gaining control of an abandoned tunnel which would be a crucial link in the system. This is viewed as a holding action to prevent the Skybus side from taking any irrevocable actions until after the November elections. If voters put in an anti-Skybus slate, the whole project would have to be reevaluated. What will happen to the $60-million DOT grant if Skybus is scrapped? DOT sources say this would require a new game plan from Pittsburgh before the money could be released.

# It takes more than talk to get your grain business.




That's why the needs of grain and grain product shippers receive top priority at Penn Central. We want your business, whether you're shipping a carload or a trainload. And we're doing everything we can to get it.

- We've put in tighter schedules to give us faster turn-around, better utilization of equipment, greater availability of cars for peak periods.
- We have 1,000 new 100-ton covered hoppers and have rebuilt 1,500 box cars, ready for your current harvest.
- We're tailoring our domestic and export rate structure to meet competitive and commercial requirements.
- We've revised our policy on loss and damage grain claim settlements in line with your recommendations.
- These are some of the things our Grain Marketing Team led by Ernie Wogen, Joe McNamara, and Don Rehl are doing to earn your traffic. Results mean a lot for all of us. Markets for your grain and grain products. Markets for our transportation service.

PENN CENTRAL TRANSPORTATION COMPANY

You can count on us.

# Boston converts commuter lines to

By FRED HOUSER, Mechanical Editor

Three weeks after its opening, Boston's newest transit line had almost as many weekday riders as the planners had earlier estimated it would have a year after the start of service.

The line is the South Shore Rapid Transit Extension of the Massachusetts Bay Transportation Authority. The success is, in part, the result of MBTA's conversion of commuter rail routes to rapid transit, a program that has been in progress for over a decade and is scheduled to accelerate in the years ahead.

Remember Old Colony, the suburban route, which died a lingering death in the late 1950s and contributed substantially to the economic downfall of the New Haven which operated it? It is on the Old Colony right-of-way that MBTA has constructed its 6-mile route to Quincy and on which these transit tracks probably will soon be pushing to Braintree and Weymouth or Holbook.

● **Attractive alternate.** "The average number of weekday riders between Quincy and Boston, in both directions, is now over 18,000," reports Joseph C. Kelly, MBTA general manager. "The projection of Monday-through-Friday riders, after a year's operation of the line, was 20,000 per day in both directions."

He concludes that the ridership "clearly shows public acceptance of the new, fast and comfortable service MBTA is offering to Quincy and South Shore residents" and indicates it is "an acceptable alternative to driving on crowded local streets and the Southeast Expressway into Boston."

MBTA proudly points to the fact that the South Shore Extension is the first line to be built and put into operation under the 1964 Urban Mass Transportation Act which enabled DOT to award a $35.2-million grant toward the cost of the route to Quincy and Braintree.

Patterns established when a large proportion of those traveling to Boston's Central Business District rode privately-operated commuter trains have altered somewhat with the construction of new highways and the withering of train service on financially hard-pressed railroads, all of which are now bankrupt. However, with establishment of transit service, MBTA finds that riders return readily to the rails.

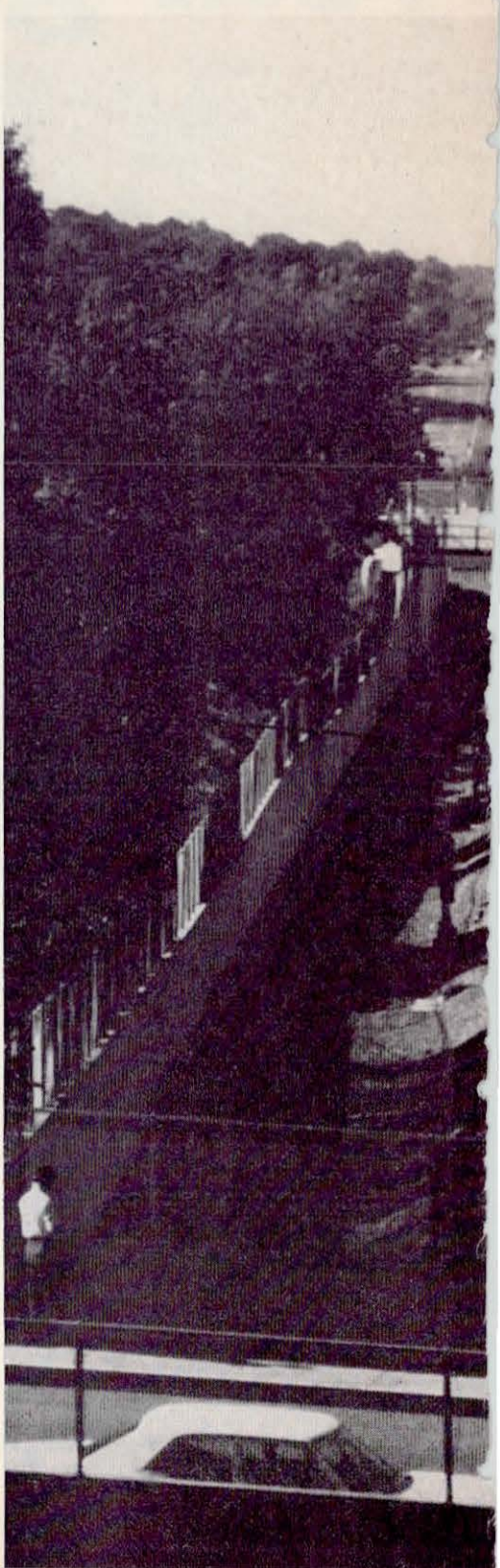
The East Boston rapid-transit extension to Wonderland, opened in 1954, was constructed largely on the right-of-way of another transit line abandoned two decades earlier. In 1959 the Riverside transit line went into operation following acquisition and conversion of the Boston & Albany (New York Central) Highlands Branch.

The next phase of MBTA's transit expansion began in August 1966 with the groundbreaking for the Neponset River bridge at North Quincy. Five years later, on Sept. 1, 1971, the line to Quincy began to run trains. That was exactly 74 years after Boston's (and North America's) first subway began to operate with electric streetcars.

● **Northern expansion.** Work is now well advanced on MBTA's Haymarket-North line which has involved acquisition of the 16-mile Reading branch of the Boston & Maine. While B&M is receiving $18 million for the 16-mile line to Wilmington Junction, the first stage of rapid-transit conversion covers 6 miles to Malden. A major phase of this was completed recently as the final steel went into the Mystic River Bridge. Here, as elsewhere on the line, MBTA is providing trackage for B&M to conduct its freight operations.

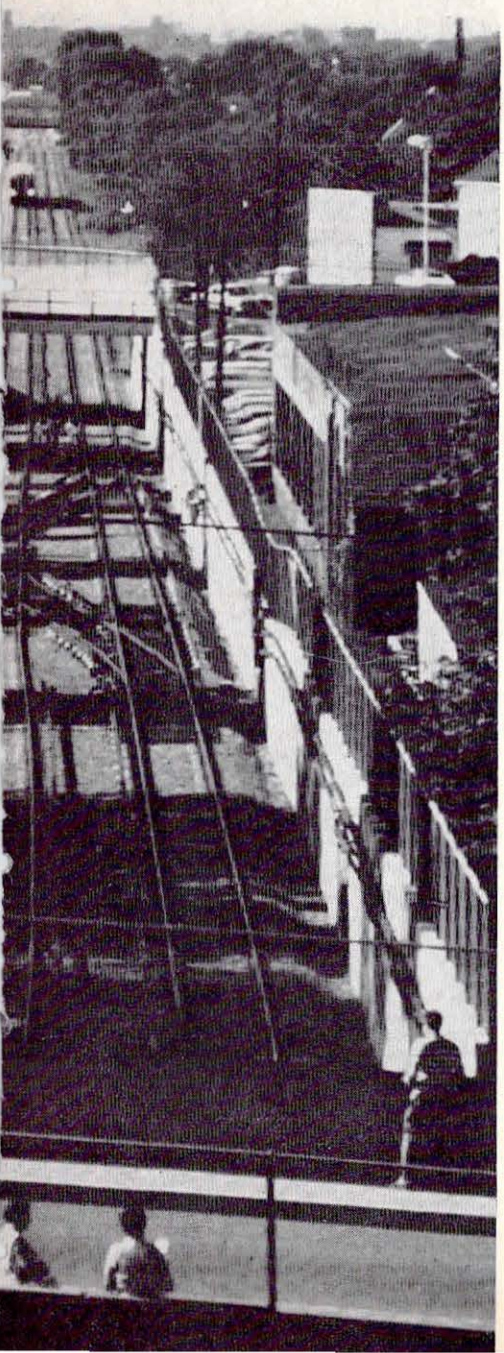
Steps have already been taken to acquire Penn Central (ex-New Haven) lines southwest from Boston for rapid-transit extensions. The 1971-1975 program for expanding and improving MBTA is expected to cost over $600 million. To be eligible for two-thirds funding under the Urban Mass Transportation Assistance Act of 1970, MBTA is now seeking local clearance for additional bonding powers of $250 million.

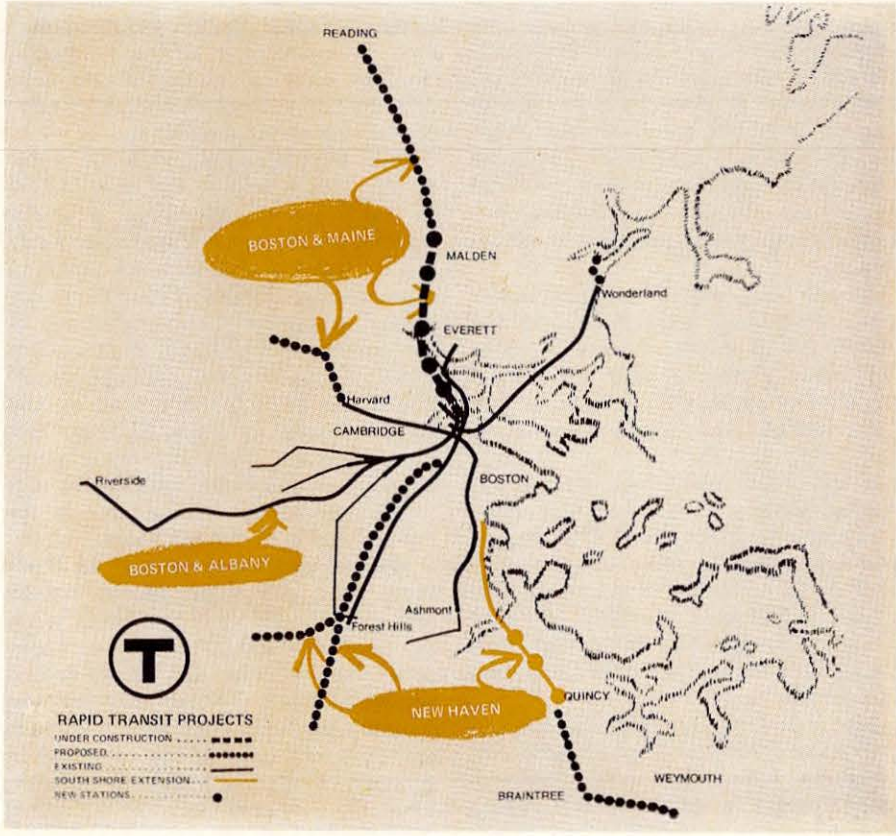
● **Related benefits.** Well in advance of the South Shore's opening, major real estate developments were being located to take advantage of the new 14-minute Quincy-Boston train schedules. One such is the State Street South



# rapid transit

**BOSTON'S RADIATING RAIL ROUTES** establish the pattern for MBTA's expanding rapid-transit system. The former New Haven line into Quincy (left) has been rebuilt on completely grade-separated alignment with concrete ties and welded rail for South Shore Extension. There is space for an additional track for a Penn Central switching spur or for possible added transit capacity. Meanwhile construction of the Haymarket North route, another Federally aided project, is being pushed with the $9.1-million Mystic River bridges (above) just being completed into Medford. Bethlehem fabricated and installed the 2,500 tons of Mayari R weathering steel involved in providing a three-track right-of-way for MBTA and besides it a single-track, higher capacity span for Boston & Maine.






complex adjacent to the North Quincy station (*see cover*). Such construction, a Harvard University study has shown, will do much to stabilize property tax rates in communities adjacent to the new line.

A major reason for the success of MBTA's rail rapid transit lines, compared with rail commuter services they have replaced, is improved center city distribution. Rather than operating to and from a single downtown station, the new lines feed into existing downtown subways with multiple stations that mean many more uninterrupted rides to final destinations.

Another is provision of parking at suburban stations and the coordination of feeder bus service. At the three new stations on the Quincy line, for instance, there is space for over 2,000 automobiles in lots and in a multi-level garage in downtown Quincy where space is at a premium.

● **South Shore line.** The double-track, third-rail South Shore line branches from MBTA's 9-mile Cambridge/Dorchester route as it exits from the

downtown subway tunnel in southeastern Boston. South Shore presently continues 6.1 miles on the completely rebuilt Old Colony right-of-way to the Quincy terminal. It is a surface route, completely grade separated and entirely fenced.

Because of a series of construction delays, Pullman-Standard delivered the 76 cars well in advance of the completion of the line (see the accompanying box). They were operated on the Cambridge/Dorchester line for many months before beginning their runs to Quincy. Including equipment, the South Shore line presently represents an expenditure of over $75 million.

For the first time MBTA has chosen welded rail and concrete ties. The 115-lb rail was welded into quarter-mile lengths at an oxyacetylene shop set up along the line. This rail is laid on 24,000 Danish duo-block concrete ties.

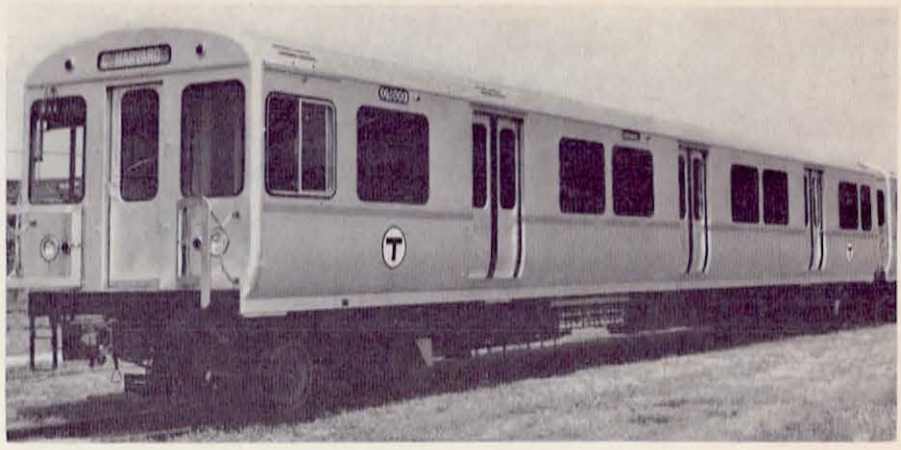
A new Operations Center has been opened in downtown Boston from which the Ashmont and Quincy lines are now operated and from which eventually MBTA's entire system will be directed. The Control Center includes master console, dispatcher's console, two headway recorders, a high-speed electronic supervisory control system and a visual readout and printed record for automatic car identification, used for route selection.

Dispatchers may select either automatic or manual control for both the Ashmont and Quincy lines with either automatic or manual route selection at the subway portal. Also controlled are snow melters. Train indications on the track diagrams show not only location but also which route each train is operating. Telephone and Motorola radio give instant contact with trains, starters and inspectors.

● **ATC/ATO.** There are no wayside signals, except at interlockings. All cars, including the 92 older Cambridge/Dorchester line units, have been fitted with cab signals.

General Railway Signal's control equipment provides a combination of automatic train control (ATC) and automatic train operation (ATO) which MBTA says is a "first" in the transit industry. Cab signals take the place of wayside block signals. One of eight speed commands is displayed in the cab at all times; in the ATC mode this is constantly supervised by on-board control. In the ATO mode, propulsion equipment is automatically regulated to hold the speeds specified by the ATC system. No provision has been made, however, for automatic station stopping.

The high-performance cars which run at up to 70 mph on the Quincy line may be operated as many as six to a train. Six substations were installed to provide adequate power for such performance.■



## Cars are attractive and practical

Comfortable—but not lavish; attractive—but not garish; clean-lined—yet not streamlined. That describes the 76 recent additions to the Massachusetts Bay Transportation Authority transit car fleet. They represent what might be described as a proper blending of rider appeal with earthy practicality.

Built by Pullman-Standard at a cost of about $13 million, the new MBTA cars are exceptionally large as transit vehicles go. Each has a seating capacity for 64 persons and standing space to accommodate another 175. When they began coming off the assembly line at the carbuilder's Chicago plant in late 1969 the cars were billed as the longest (69½ ft.) built for operation on any transit system in the U.S. Since that time, however, other cars have come along—like San Francisco's BART cars—to supplant the MBTA cars at the top position in the record books.

● **Cool cars.** In the eyes of the thousands of transit riders in the Boston area, perhaps the thing that really raises the comfort index of the new cars way above that of older cars in the fleet is air-conditioning. Twelve tons of air-conditioning have been built into each car, sufficient to keep the cars cool in summer, even when loaded to capacity. Until the new cars came on the scene, Bostonians and others living in the 78 surrounding and densely-populated communities served by MBTA had never been treated to the comfort of air-conditioning in rail transit vehicles.

Also helping to boost the comfort index of the new cars are such things as transverse seating and upholstered seats. The latter feature black vinyl coverings, which also contribute to the improved maintainability of the cars. Fluorescent lighting represents another plus for riders, as does the rainbow color selections inside—blue fantasy, coral, beige, blue echo and blue-gray.

● **A pair of construction firsts.** Another special feature of the car is the brushed aluminum finish on sides and ends. Not only is this type of finish a first for Pullman-Standard but also the first time it was ever used on a transit car in the U.S. The roofs are made of corrugated aluminum sheets which are, according to their manufacturer, Alcoa, the largest of their type ever made.

Of the 76 cars built for operation on the relatively curve-free 6-mile South Shore extension of the MBTA system, 26 are A units, 26 are B units, and 24 are single-car units. The A and B units, designed to operate as married pairs, differ in that the A units carry the pair's batteries, while the B cars are equipped with the air compressors. The single cars, meanwhile, are designed to operate solo if necessary.

Four Westinghouse Tracpak traction motors (each rated at 100 hp), power each car, giving a maximum speed of 70 mph and a peak acceleration rate of 2½ miles per hour per second (mphps). Maximum dynamic braking rate, equivalent to 1.3 mphps at the top speed, tapers uniformly to 2.75 mphps at 50 mph. Dynamic braking stays in effect down to 15 mph, and then the air brakes take over automatically to bring the cars to a complete stop.

● **Pounds shaved off.** Despite all their sophistication and all the newly developed systems built into them, the new MBTA cars are considerably lighter than any built previously for the system. For example, the A and B cars weigh slightly less than 61,000 pounds. The single units tip the scales at just a little over 64,000 pounds. Both weights are considerably lower than those of cars built earlier. Aluminum construction is a major contributor to the weight-saving. **—R.D. Bartley**

# IC's de Camara heads car-control task force

Richard P. de Camara

In a move of great potential significance, the Association of American Railroads on Oct. 1 announced creation of a railroad task force to design a national car information and control system. Richard P. de Camara, vice president of administration for Illinois Central, will head the group, whose other members will be recruited from among railroad traffic, data systems, transportation, car service and communications officers. The work will be under the direction of a steering committee consisting of three AAR executives—R. B. Curry, vice president of management systems; W. J. Harris, vice president of research and test; and R. R. Manion, vice president of operations and maintenance. (While de Camara is on an extended leave in Washington, his responsibilities on the IC will be assigned to Henry F. Davenport, vice president-passenger services, effective Oct. 1.)

AAR President Stephen Ailes listed six goals which the new system will be designed to accomplish: increased equipment utilization; reduced car shortages; increased customer satisfaction; decreased capital requirements for new equipment; reduced administrative costs; and enhanced railroad profitability.

Part of the task force's assignment will be to examine two existing programs—TRAIN (TeleRail Automated Information Network) and ACI (automatic car information)—and determine where they will fit into the new system. "Although the two programs are separate and distinct, it is hoped that both will contribute substantially to the new national car information and control system," said the AAR.

Ailes said: "We believe that the national system should be built around existing management information systems But it is understood that system redesign may entail some modification of such systems. It is also understood that it will be expensive and will require a high degree of industry cooperation and discipline." He added that "the benefits to be derived from the project make it worthwhile."

At the conclusion of its study, the task force will present a set of recommendations, along with a cost/benefit analysis, to the AAR's directors, who authorized the project.

The importance of the AAR's move had been heavily underscored just a few days earlier.

"We need a national freight-car-control-and-information system because we have no other way to create additional capacity. It is the quickest and cheapest way to get more out of what we have."

So said Alan S. Boyd, Illinois Central president, in his keynote address to the Sept. 20-21 annual meeting of the Data Systems Division in New Orleans.

The message was clear that railroads must improve car utilization or someone else will do it for them: "Top DOT officials routinely say that what Class I railroads need is a car-scheduling-and-control system," Boyd said. The Fastcor bill introduced into Congress proposes a government corporation to control railroad freight cars. All these signs, said Boyd, "are a signal of our need to take action—if we want to keep government intervention in the field of freight-car-control-and-distribution to a minimum."

An effective national car-control-and-information system, Boyd said, would:

—Increase equipment utilization and reduce car shortages on a free-moving, national basis matching capacity with changing demand.

—In conjunction with automatic car identification and ultimate elimination of much repetitive clerical work would result in substantial reductions in rail administrative costs.

—Eliminate the threat of government activity in the area of freight-car management.

—Increase shipper satisfaction, and result in enhanced railroad profitability.

● **ACI needed.** "The rail industry knows it must have automatic car identification, but its value is hard to measure . . . Which of you would like to measure and report upon the value of the telephone on your desk? Only by trying to think of our jobs without telephones can we get some inkling of their importance. So it is with aci," Boyd continued.

"ACI will give us the opportunity to know, with less error, what is moving on the U. S. rail system as it moves. With that knowledge, and with that kind of national data base, we will be on our way toward being the truly national freight common carrier. If we are, it follows that our individual companies will benefit substantially from our increased capacity and service capability and from our obviously greater importance in that nation's affairs."

● **Match capacity with demand.** "The national matching of capacity with demand cannot but improve our use of equipment and ease the industry's squeeze for capital. Our ability to trace a car and report to our customers—no matter where the car may be off-line—is obviously going to improve our ability to help our shippers," Boyd added.

Couple this matching capability with aci and the industry's communications network that is spreading over the entire system of trunk lines, and Boyd sees an opportunity for railroads on the magnitude of that provided by dieselization.

● **Computer outlook.** Change is accelerating so rapidly in the computer world that planning computer hardware and software usage now should meet all possible futures and have room for alternatives. During the next decade computer operations will change from large operating systems of one or two central processors to many smaller CPU's operating in parallel, Commander Grace Hopper, director of Navy programming languages division, department of the Navy, told the DSD meeting.

Cmdr. Hopper said that the large operating systems now being developed and proposed are increasing in complexity, require increased debugging functions and generally increase overhead costs. Costs can be reduced by operating mini-computers and communications networks.

"Modularize" and "standardize" are two key words for data processing, Cmdr. Hopper told the Division.

Cmdr. Hopper had a word of caution about the trend to provide easy access to large data-based systems—the trend fostered by the multiplicity of input/output terminals now available. Managers, she said, deal with totals, not details, therefore access to the data base should be limited so that a manager should be given access only to the information he requires for managing. ■

# Transpo 72: To show or not to show?

Can a covered-hopper freight car and a supersonic jet transport find happiness together at Transpo '72, the gigantic International Transportation Exposition which the U. S. government will mount at Dulles International Airport in May of next year?

The question is one that is plaguing railway equipment suppliers, who are under great pressure to buy exhibit space at Transpo—but who wonder quite frankly what they stand to gain by it, beyond the good will of the U. S. Department of Transportation.

It is, so far, an academic question. The British and French have made no commitment to bring their supersonic Concorde to the Dulles show, nor have the Russians promised to bring their own SST. But it is likely that both will be there, along with a dazzling array of other aerospace equipment from around the world.

At this time, however, it appears less likely that railway suppliers in any great numbers will be willing to commit their time, talents and technology to an enterprise that was originally conceived as an air show, and which many observers still think will be essentially that, despite the best efforts of DOT to put together a "truly-transportation" exposition at Washington's white-elephant airport.

Right now it looks as if Transpo '72 will have, from the railroad industry, a 19th century steam locomotive; possibly (though not certainly) a joint "institutional" exhibit by the Association of American Railroads and the Railway Progress Institute; probably (though not definitely) an Amtrak TurboTrain; and scattered exhibits by other suppliers, some of whom will show up as much in self defense as anything else.

**What, precisely, is Transpo?**

The idea was originally promoted by the aerospace lobby in Washington, which wanted a U. S. exposition to rival the Paris Air Salon, which is held in odd-numbered years in May-June, and the Farnborough (England) Air Show, held in even-numbered years in September. In appropriating $2.8 million to underwrite basic costs, Congress decided all modes should be included.

Transpo '72 is now set for May 27-June 4 of next year. It will occupy a 300-acre site at Dulles Airport. There will be 320,000 square feet of indoor exposition space, in four vast steel halls, and around 1,000,00 square feet for outdoor exhibits.

**What is Transpo's stated purpose?**

"It's basic objective is to alleviate the nation's increasingly serious balance of payments problem by helping to reverse the outflow of dollars from the U. S." says Transpo's official "background" paper.

**How many exhibitors have signed up?**

As of last week, about 60% of the available space had been reserved by more than 240 exhibitors. Only one foreign government—Canada—has so far signed, but many others are expected.

**How many railway suppliers will be there—and why?**

It's difficult to say precisely how many railway exhibits are already assured; the present list includes manufacturers who make railway equipment but are also big in other forms of transportation (e.g., General Electric, General Motors).

Chester Spurgeon,
Transpo managing director

One of the few old-line rail suppliers that has signed up for Transpo '72 is WABCO, which has rather special reasons for wanting to be at Dulles. WABCO now has a Monorail Division (near Cape May, N. J.). WABCO considers its monorail system to be a prime candidate for people-moving within airport areas. So WABCO is buying 1,000 square feet of exhibit space at Dulles to show a pair of two-car Monorail trains. Four potential competitors in the people-moving business will also be at Transpo '72—the difference being that they are being paid to develop and display systems. (Says one observer: "This is another example of an established supplier having to compete with the brochuremanship of aerospace companies that haven't even got a product yet.")

**How can heavy rail equipment be hauled into Dulles?**

This poses a real problem, concedes Chester Spurgeon, managing director of Transpo. The nearest railhead is at Manassas, Va., 12 miles away. At one time the building of a rail spur to the airport was considered, but a survey (in which the Southern Railway participated) found this to be impractical, both from a cost and a time standpoint.

Spurgeon suggests that individual railroad cars, both passenger and freight, can be hauled to Transpo on heavy-duty flatbed highway trailers. If the TurboTrain is shown, it will arrive in this fashion, transported piece by piece.

Heavy railway equipment can also be flown in by C5 transport planes, says Spurgeon.

**What reasons does Transpo advance for greater railroad participation?**

Reminded that many railway suppliers do not have high hopes of capturing a big export market and that others who do have export markets feel that the million or so people expected to attend Transpo will be essentially aerospace-minded—Spurgeon suggests that there are other reasons for exhibiting.

In addition to the anticipated presence of Ministers of Transport from many countries (who, says Spurgeon, will be shopping for transportation rather than merely for aerospace hardware), numerous railway executives are expected to attend. And much of V.I.P. Washington will be present, he notes, giving industries represented a chance to polish up their images where it counts.

As for the display of freight equipment, and the possibility that railroad freight cars might be outdistanced by supersonic jets in the glamour sweepstakes, Spurgeon has this to say:

"What's sexy about a gondola car? Frankly I don't know. But anybody who has something new—anybody who has found a better way of transporting people or freight—has a place at Transpo."

A large part of the railroad industry remains unconvinced. While not doubting the sincerity of DOT Secretary John A. Volpe in his determination to give all forms of transportation a fair shake at Transpo, and while appreciating the efforts of able, hard-working Chester Spurgeon and his staff to give the U. S. an exposition that will take a back seat to nothing the French and the British can produce, railroad men interviewed by Railway Age still tend to view Transpo as basically an air show—with at best fringe benefits for those who choose to piggyback on the inherent glamour of aerospace. ■

# Introducing Barco's new speed information systems

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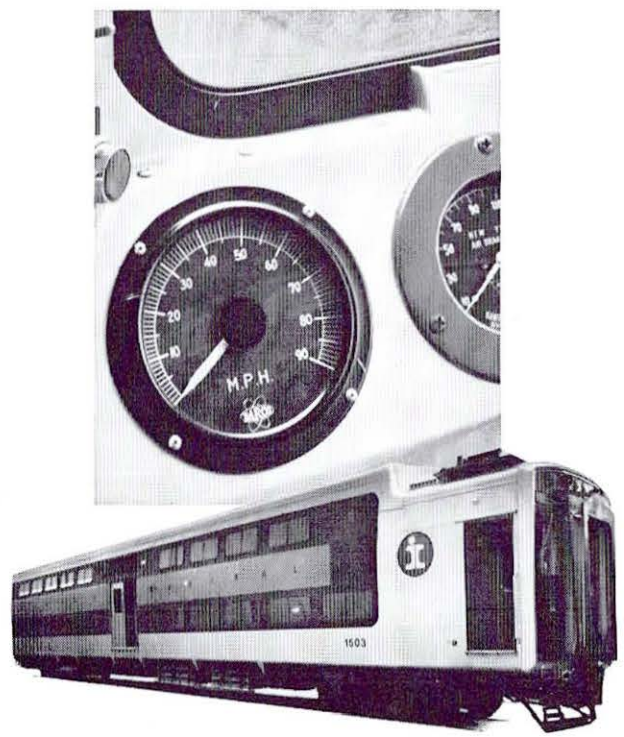
*Aeroquip products are protected by patents internationally.*

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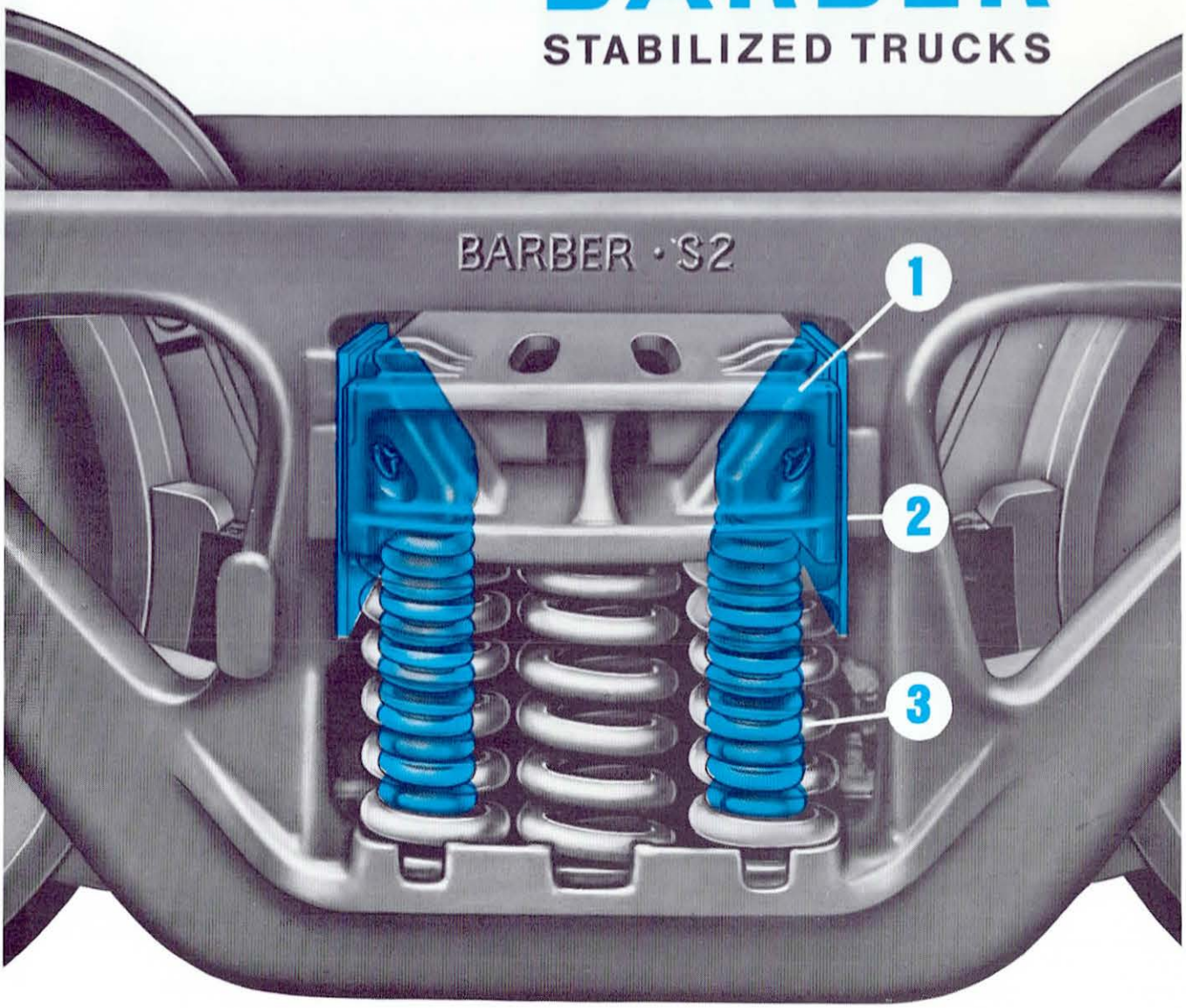


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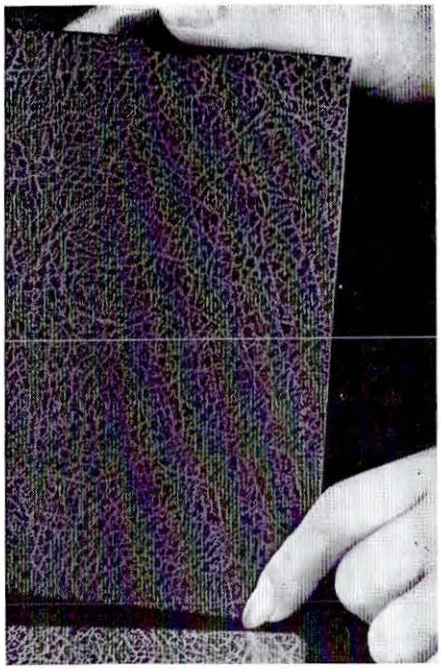
# New Products Report

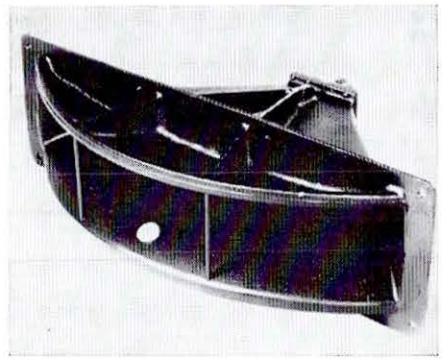


**Embossed stainless steel** (RA-1)

Colored embossed stainless steel sheets for transit car interiors are produced by painting and then brushing the surface to expose the gleaming stainless while leaving color embedded in the pattern. Available in a variety of surface finishes, the stainless brightens the interiors of transit vehicles without increasing shop fabricating costs. Stainless steel has the advantages of durability and cleanability in heavy-service situations. Embossed stainless steel sheets are available in widths from 10 to 48 in., in thicknesses from 16 to 28 gage, and in 23 patterns, eight of which are geometric. Embossed steels can now be repaired. When damaged, an electrochemical etching technique can match and blend patterns to save parts. *U.S. Steel Corp.*

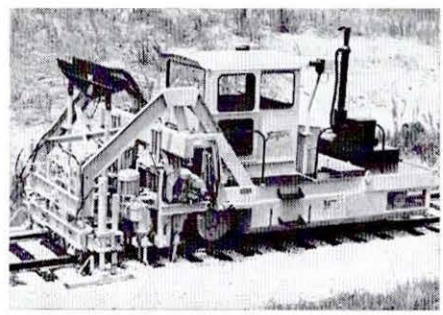
**Pre-fab shelter** (RA-2)

A new passenger shelter with a shatter-proof glass surface provides the commuter with a clear view from all sides. The shelter—available with custom touches making it blend with any surroundings—is made of weatherproof, low-maintenance materials. It is factory assembled, requires no foundation and can be easily moved to a new location. The shelter is available in many versions. It may be ordered with flexible roll-around doors that keep out wind and rain, bullet-proof windows, cold-weather-starting fluorescent bulbs, radiant heaters and built-in seats. *Melrose Displays, Inc.*



**Speaker horn** (RA-3)

A weatherproof radial horn, designed for indoor or outdoor use in transportation terminals is specifically designed for high-intensity audio in the middle and upper range of the spectrum. Designed for paging and public address systems, it can be used either as a single projector horn, in a horn array, or as a high-frequency component of professionally designed, full-range loudspeaker systems. The horn is manufactured of one-piece cast aluminum. *Atlas Sound.*



**Improved switch tamper** (RA-4)

The new 16-tool Switch Electromatic Tamper is equipped with air-over-hydraulic operation. The machine features the same heavy-duty, high-frequency, vibratory drop-and-squeeze workheads used on all Electromatic tampers. With this machine it is said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that one man can tamp the entire switch, turnout, crossover or ladder track.

The split-head design allows the workheads to be moved laterally on a carrier beam; they may be operated individually or together.

In this machine all hydraulic valves can be manually operated in case of air failure. The air-brake chamber operates two independent master cylinders, one for each side, which provides two wheel brakes if a line should rupture. The air system is equipped with compressor delivery governor, safety valve, large air tank and filter lubricator.

The cab, now fully enclosed, is pressurized. It is said to provide a better view for the operator and has a bench seat for two or three men behind the operator's position. The operating controls are placed at the ends of the operator's arm rests. All-weather climate control for the cab is available as an option.

When not being used as a switch tamper, the machine is said to double as a production tamper, for smoothing and spotting and as a second machine in a tandem operation. Using the Junior Foreman attachment, a simple infra-red surfacing device, and the jacking attachment, the Switch Electromatic becomes a one-man operation for surfacing out-of-face, joint peaking, and spotting and smoothing track. *Tamper, Inc.*

**Spike straightener** (RA-5)

For the St. Louis-San Francisco, the addition of a Nordberg Spike Straightener to its equipment lineup meant the ability to reclaim $960 worth of spikes weekly, according to the manufacturer of the device. At this rate the railroad was able to pay for the machine in a few weeks.

The Frisco purchased the Spike Straightener in connection with a program to drive hold-down spikes on curves. To keep costs at a minimum, it was decided to salvage and use only secondhand spikes for this operation. The majority of the spikes were recovered from regular rail-laying operations of the railroad.

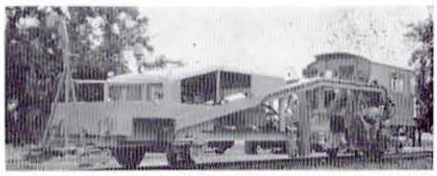
The Spike Straightener consists of two basic parts, a straightener press powered by a gasoline engine-hydraulic pump-oil reservoir package and a PG grinder powered by another gasoline engine.

The press exerts 30,000 lb of force to straighten bent spikes which are inserted by the operator two at a time, point first. To operate the press, two hydraulic control valves must be activated simultaneously. This requires two hands, keeping the operator's fingers away from the press.

The PG grinder is equipped with an emery wheel and tool rest for sharpening tools and a wire brush wheel for cleaning fouled spikes.

In its initial spike-reclaiming operation, the Frisco line installed the Spike Straightener under a viaduct in its Tulsa, Okla., yard. There, the single operator is able to salvage spikes at the rate of 240 per hour, straightening most and cleaning them all, according to the manufacturer. At 10 cents each, that means $960 worth of spikes a week are being reclaimed.

The Nordberg Spike Straightener is sold as a knocked-down kit containing the structural parts and various subassemblies. The kit, said to be easily erected, can be mounted either permanently in a shop or yard, or portable on a standard push truck, railway tool car or skid. *Railway Equipment Division, Nordberg-Division of Rex Chainbelt, Inc.*



**Automated tamper** (RA-6)

Full automation of the Plasser Universal 06-16 tamper is now available as optional equipment. Automation is accomplished through use of a sensing unit which gets its activating impulse from the tie plate of the tie to be tamped. Squeeze time and pressures can be selected and set for uniform results.

It is pointed out that automation overcomes possible operator fatigue and insures continuous regular tamping cycles that result, it is said, in not only uniformly tamped ties but maximum increased production. The manufacturer notes that the complete operation of lifting, leveling, lining and tamping becomes entirely automatic, independent of any manual control. It is also noted that laser-beam lining can be applied to this unit. *Plasser American Corp.*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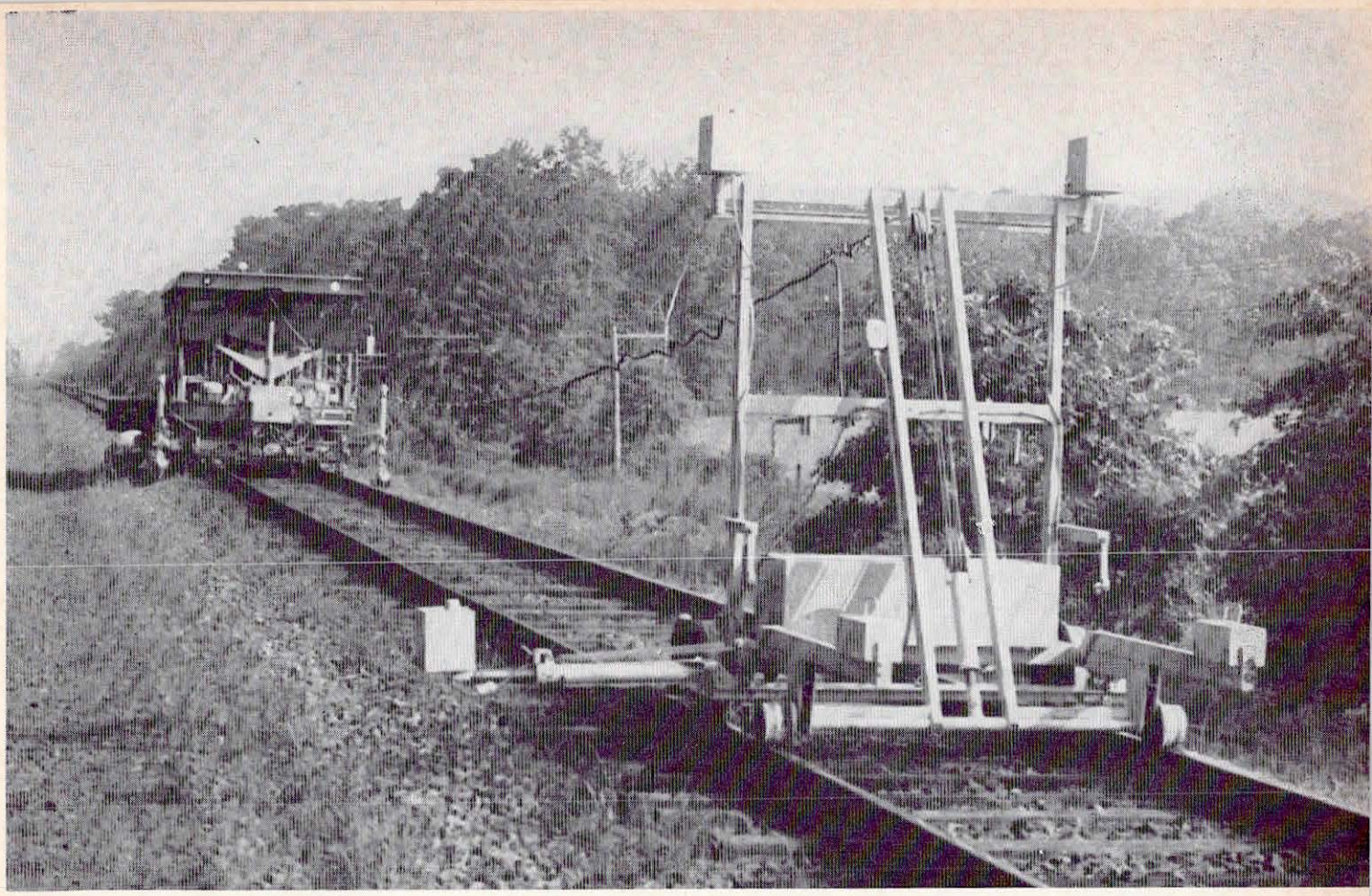
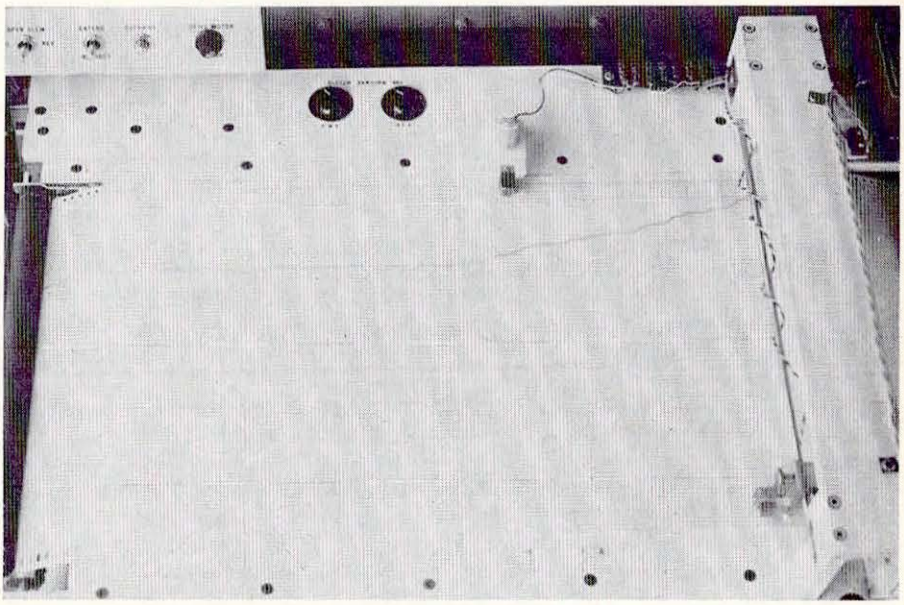


**STARTING ON TANGENT TRACK,** the tamper is run around the curve with the attachment recording line deviations on a graph.

# How the C&NW realigns curves

## Tamper, Inc., device automatically measures curves, then lines them



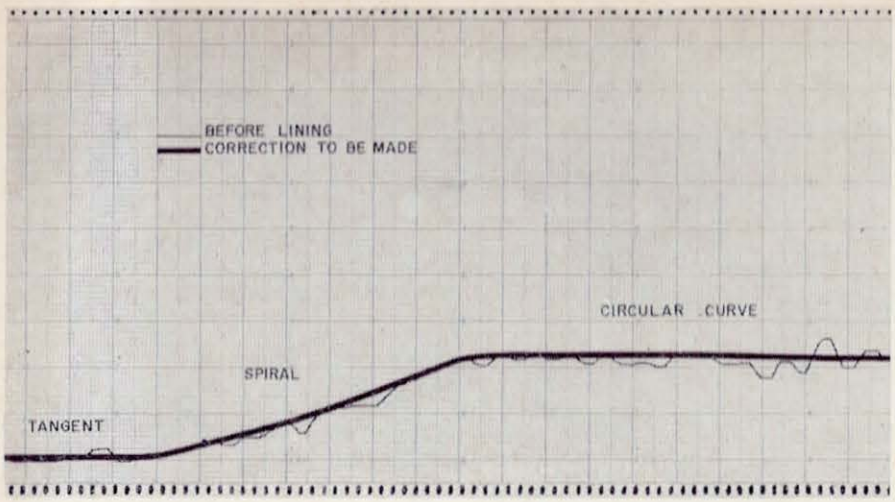
**WAVY LINE ON THE GRAPH** is made with water-soluble red ink. It is fairly transparent, so the photo-electric sensor will ignore it.

Factual information about the condition of track alignment can be automatically recorded graphically by a device designated the Auto-Graphliner, an attachment for Tamper's Autojack Electromatic tamper. By superimposing a special tape on the pictorial graph, the required corrections can be fed back into the machine, and it will make the necessary alignment adjustments while the tamper does its production tamping.

One such machine, manufactured by Tamper, Inc., was operating recently near Warren, Wis., on Chicago & North Western's single-track main line between Wyeville and Eau Claire. Together with an Electromatic switch tamper and a Kershaw ballast regulator, it was making an average out-of-face four-inch track raise on five miles of track. Tie renewals had been made on this track the year before.

The work force was comprised of a foreman, an assistant foreman, three machine operators and two laborers. This gang was supplemented by a three-man crossing gang which opened up and closed highway crossings so the surfacing gang could work through them.

Douglas Oakleaf, division engineer, had the Autojack Electromatic tamper, with the Auto-Graphliner attachment, out in front where it was normally raising, lining and tamping. He worked the Electromatic switch tamper in tandem, tamping the intermediate ties. This ma-




**SPECIAL MARKING TAPE** is superimposed over graphed line to produce the desired spiral and curve. The tamper-liner uses the tape for its work instructions for lining.

chine also tamped all ties through turnouts and, while it was doing so, the Autojack Electromatic tamped all ties beyond the turnout until the switch tamper was ready to resume its normal tamping. The Kershaw ballast regulator first worked ahead of both machines, pulling ballast up to the tamping areas, then dropping back to dress the ballast.

● **Value is on curves.** The playback function of the Auto-Graphliner is designed only for use when lining curves. It is cut out when tangents are lined.

The paper on which the curve graph is produced has fairly heavy horizontal lines one inch apart, which distance corresponds to one degree of curvature. Curves and spirals up to 10 degrees can be charted with the standard system length of 115 feet. Curves and spirals of sharper curvature can be recorded and lined with a shorter system length. Lighter lines, 0.10 inch apart, permit reading curves in tenths of degrees. The paper has vertical lines one inch apart, this distance representing 39 feet of track. The lines are printed on an environment-stable paper that is immune to changes due to humidity variations and can be stored for future use.

The Auto-Graphliner system consists of a projector at a fixed distance from the line rail, a shadowboard at a variable distance from the line rail, and a receiver also at a fixed distance from the rail. Through these, a three-point determination of a curve is provided.

● **Photocell is key.** The recorder consists mainly of a glass-enclosed paper-drive mechanism and a stylus-drive mechanism for the recording mode of the system. The playback mode of the system, by which the graph of a desired curve based on the versine is fed into the machine, consists of a photo-electric cell sensor which follows the new desired curve on the paper and immediately transmits its motion to the shadowboard. This position of the latter in turn controls the track-lining mechanism. The paperdrive mechanism is said to be very accurate and to keep the recording paper and machine constantly synchronized, regardless of speed.

Both the stylus and photo-electric feedback are driven by a common motor, which, through the same mechanism, also drives the shadowboard. This mechanical connection is said to reduce the need for analog feedback systems and also to increase the reliability and accuracy.

The movable shadowboard is located at the point of tamping. In its recording mode, it is constantly locked into a light beam (chord). Such locking is achieved by using a receiver which permits accuracies of versine measurements to 0.005 inch and which is insensitive to extraneous light, as well as the variation of light intensity emitted from the projector. Should the machine move through an alignment deviation (error), it will cause the shadowboard to move seeking the light beam (chord). Such motion is instantaneous. In this way a true graph of the versines will be produced by the recorder automatically and accurately.

The Auto-Graphliner is designed for a speed of 15 mph for recording a spiral into a 10-degree curve. At this speed, it will follow an error up to a maximum of one inch in 20 feet. Track correction takes place at the standard performance speed of the Electromatic tamper.

When a curve is to be measured and lined, the Electromatic tamper is stopped with its front projector buggy on tangent track. This is the starting point and a mark is made on a tie where the machine operator can see it. A pen mark also is made on the recording graph paper at a point marked on the frame of the recording table. The operator lowers the stylus to the paper and positions it on the "zero" line of the graph. The shadowboard and stylus are now synchronized at "zero."

● **Graphs actual conditions.** The operator switches on the "record" instruction and runs the machine around the curve until it is clearly on the second tangent. While this is being done, the shadowboard constantly moves with the light beam and the stylus is automatically recording the line variations.

After completing this run, the stylus is lifted from the paper and the machine is returned to the starting point. The paper all the while is reversing with the machine.

The foreman then disconnects the paper from its drive mechanism and graphs the spirals and curve that he wants the machine to reproduce. He uses a special marking tape, ⅛ inch wide, with adhesive on one side for this purpose. When placing the tape, he balances the outward and inward throws so there will be no problem with the rail steel fitting in length. The adhesive on the tape is such that the tape can be lifted and reapplied to the paper until the foreman is satisfied with his plotting.

The recording paper is then turned back so that the machine and the tape are synchronized at the starting point, and the graph paper is again connected with the paper-drive mechanism. This done, the operator switches on the "play" button of the Auto-Graphliner system and starts the tamping machine forward. He operates the machine as he usually does, setting the change in superelevation for the spirals and curve. He tamps the ties until he reaches the far tangent. The machine meanwhile lines the track as the photo-electric sensor follows the taped instructions. The liner mechanism is then turned to "off" and the machine automatically reverts to the tangent-lining mode.

There is a red light on a panel in front of the operator. As long as it is on, he is assured that the Graph-liner system is functioning properly. Should the shadowboard lose the lining light beam while the machine is tamping and lining, the red light will be extinguished.

● **Works well.** Division Engineer Oakleaf said he had used the same three machines the week before near Eau Claire where three curves were involved. This was a "shakedown" use of the new Auto-Graphliner system, he said, and he was making only a skinlift raise. There, he had only one tool insertion made per tie and the outfit averaged about 1,400 feet per on-track hour. At the Warren location, he was making two insertions for a four-inch raise and his production, which included one curve, was about 870 feet per on-track hour. Oakleaf said he was "real pleased" with this performance. ■

# People

**AMTRAK.—Frederick G. Timms** appointed director of sales, Chicago area. Mr. Timms formerly was district passenger sales manager, **Santa Fe,** Chicago.

**BALTIMORE & OHIO.—Paul W. Slonaker,** sales representative, Akron, Ohio, appointed division sales manager, Wheeling, W. Va., succeeding **J. Stanley Lowe,** retired after 44 years of service.

**BESSEMER & LAKE ERIE.—R. E. Murdock** appointed general foreman, locomotive department, Greenville, Pa.

**BURLINGTON NORTHERN. — Ralph O. Avery** named director-sales and service, grain and grain products, in the newly created grain and grain products profit center, market development division.

**CHESAPEAKE & OHIO/BALTIMORE & OHIO.—Edward M. Hudgins,** general claims attorney, Baltimore, named vice president and head of the new Casualty Prevention Department.

**Ottis T. Williams, Jr.,** district sales manager, C&O, Washington, D.C. transferred to Detroit.

**Norman G. Halpern,** director of organization planning services, C&O planning department, named assistant vice president, executive department, C&O/B&O, with headquarters remaining in Baltimore.

**RICHMOND, FREDERICKSBURG & POTOMAC.—Ronald W. Crawford** appointed assistant to director of personnel, Richmond, Va.

**F. W. Marsh** appointed supervisor of track, Potomac Yard, succeeding the late **Clarence L. Samuels.**

**UNION PACIFIC.—John C. Kenefick,** chief executive officer, transportation division, Omaha, Neb., has been elected president of the UP, succeeding **Edd H. Bailey,** retiring.

Edward M. Hudgins
C&O/B&O

John C. Kenefick
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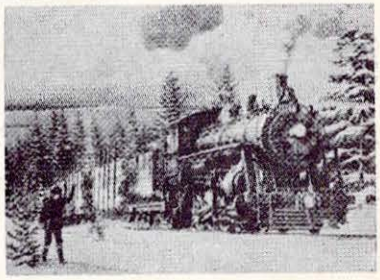

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# Watching Washington

## INGRAM IN, LYON OUT

REID BEDDOW

Thirteen months after Reginald N. Whitman resigned as Federal Railroad Administrator to become president of the Katy, and five and one-half months after President Nixon nominated Illinois Central's John Ingram to fill the long-vacant post, the Senate on Sept. 30 finally confirmed the Ingram appointment. On the same day, Carl Lyon resigned as acting administrator of the FRA to join the law department of the Association of American Railroads. Ingram, Illinois Central's vice president of marketing since 1966, won confirmation "without objection."

## MORE DOLLARS FOR GRADE-CROSSINGS

Transportation Secretary John A. Volpe released $400 million in Federal highway funds Sept. 30, asking that grade-crossing projects be given "the highest priority" in the money's use. "Last year 1,500 deaths were attributed to unsafe rail grade crossings. And we know of almost 30,000 crossings where trains and traffic volumes justify immediate improvements," said Secretary Volpe. Not all of the money will go for grade-crossing improvements; the sum is to be channeled into several highway safety areas. The $400 million is in addition to the $4.6 billion previously authorized for state highway purposes in the fiscal year ending June 30.

## SHORT LINES

Freshman Sen. J. Glenn Beall (R.-Md.) has succeeded the late Sen. Winston L. Prouty (R.-Vt.) on the Senate commerce Committee. Sen. James B. Pearson (R.-Kan.) succeeds Senator Prouty as ranking minority member of the key Surface Transportation Subcommittee. British Railways Board Chairman Richard Marsh and Dr. Sydney Jones, BR's member for research and engineering, will testify before that subcommittee on Oct. 28-29 . . . . Sen. Philip A. Hart (D.-Mich.), in a recent floor speech, proposed creation of a $5-billion quasi-public corporation, similar to Amtrak and Comsat, to oversee transportation research and development. He said the firm could establish priorities and fund development of transport systems according to national needs. Attacking the proliferation of futuristic transport hardware, he said DOT was not giving enough attention to everyday transportation problems . . . . Rep. Kenneth J. Gray (D.-Ill.), chairman of a House Public Works subcommittee, has told Washington Terminal Co. (jointly owned by Penn Central and C&O/B&O) to get cracking on construction of a long-authorized $16-million National Visitors Center at the station or he will put the project elsewhere. The tourist center, to be built over tracks leading into the station, was approved by Congress in 1968. The Federal government will lease the center for an annual rent of $3.5 million.


**Yes, less than 37¢ a call when you tell your story in Railway Age! Figure it out:**

1. Railway Age's 12-time B&W rate is only $850. per page.
2. Audited circulation is 23,117.
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Yes, you still need personal calls to clinch things, of course. But what a great job of pre-selling, and post-selling, your "calls" through Railway Age can do!

*(figures are based on Rates and Circulation for Freight Traffic Issues.)*

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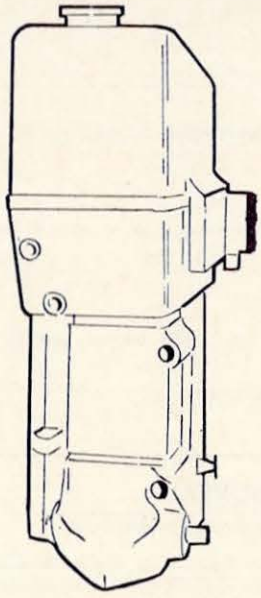

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## 78 NEW COAL-FIRED POWER PLANTS BY 1978.

## 200 MILLION TO 350 MILLION MORE TONS OF COAL TO MOVE YEARLY BY 1980.

Coal has stopped being regional. Wyoming, Arizona, Mississippi, Missouri, Washington, Texas all will have coal burning stations. So those of you who haven't looked into unit coal train operation may find this a good time to plan ahead. Hauls as short as 44 miles, or as long as 1,000 miles, can be highly profitable. This high-mileage, high-utilization service requires an understanding of heavy-capacity unit train coal cars. Greenville has it — from an owner's standpoint. We'd like to share it. We'll send our new brochure describing our high-performance cars. They're doing a great job.

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The possibility of early fatigue is included in the price of every bearing component.

The trick is to reduce the possibility.

And since that costs us a little more, it costs you a little more.

It costs us a little more, for instance, to batch test all of our seals in our laboratory.

But it is vitally important—and it helps account for our proven performance. Since 1954, Timken® "AP" bearings have rolled up billions of dependable miles on all types of freight cars.

It costs a little more to hire salesmen who are graduate engineers than just salesmen.

But they have the know-how to make sure your Timken "AP" bearings are installed and maintained for maximum life.

It costs a little more to give you a bearing with a seven-year parts replace-

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# costs money.

ment agreement that includes bearings inspected in your shop.

But it keeps us on our toes when it comes to quality and keeps you from going in the red on maintenance.

So don't gamble on some unproved bearing—just to save a few dollars. Consider a few extra dollars to get Timken "AP" bearings. It's money well spent in the long run. The Timken Company, Canton, O. 44706.

**Worth more in the long run.**

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REGISTERED TRADEMARK

**TAPERED ROLLER BEARINGS**

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## LETTERS

### Moore replies to Shapp

*In an interview with Railway Age's Fred Houser, Pennsylvania Gov. Milton J. Shapp was critical of Penn Central freight service. PC President William H. Moore replied to Shapp's comments in the following letter, dated Sept. 22:*

Philadelphia, Pa.

Dear Governor Shapp:

I read with great interest your interview in the Sept. 13 issue of Railway Age. Although I agree with your views on the need for improved urban mass transit, I must take issue with your remarks about Penn Central's freight service.

Since your statement indicates that you are uninformed about the significant improvements which have been made during the past year in our service in Pennsylvania and elsewhere, I would like to summarize some of this progress for you. . . .

[Our] remedial steps have been beneficial to Pennsylvania. For example, during the first eight months of 1971 Penn Central has operated about 6,500 more freight trains in the Commonwealth than for the corresponding period in 1970. Quantity as well as quality of service has increased.

Our Conway Yard near Pittsburgh dispatched almost 5% more cars in 1970 than it did in 1967, the year before the Penn Central merger, even though the number of revenue cars loaded in the entire United States dropped more than 3% in 1970.

Despite our financial squeeze, we have ordered about 7,500 new freight cars and 187 locomotives this year, largely through long-range lease arrangements. In addition, we have cut by about 20% our backlog of locomotives awaiting repairs and have major maintenance work scheduled for more than 17,000 freight cars this year. Pennsylvania firms (Bethlehem Steel at Johnstown and Pullman-Standard at Butler) are building 3,771 of our new freight cars, costing $63 million. At the same time, the major portion of our freight car rebuilding program is being carried out at Altoona.

Penn Central's continuing industrial development program is also making a contribution to the economy of Pennsylvania. In the last four months of 1970 our plant location specialists succeeded in placing 33 industries on Pennsylvania sites and, through the first seven months of this year they have added 27 more—a total of 60 industries in 11 months—or better than one industry a week for the past 11 months.

The construction value of these new plants and expansions of existing plants on lines of Penn Central is more than $60 million and employment will exceed 3,600 persons. Additionally, Penn Central is cooperating with the developers of 34 rail-served industrial parks within the Commonwealth. Several more such parks are in the planning stages; in fact, more than 8,000 acres of improved property in these parks are available for industry. Penn Central itself has 1,300 acres in 22 separate parcels which we are offering to industry.

We are continuing to improve our Philadelphia commuter service which carries more than 70,000 commuters a day in the five-county metropolitan area. Our on-time performance in this service ranged near 97% for August. Despite our bankruptcy status, we have not withdrawn our commitment to contribute $4.5 million toward the purchase of new high-speed commuter cars for this service.

I regret that these and other facts regarding the affairs of Penn Central in the year I have been president apparently have not been brought to your attention. . . .

*William H. Moore,*
*President*
*Penn Central Transportation Co.*


not every railroad man knows this

. . . but if maintenance is his job he should know that the only full line of lube and fuel filters for railroads is made by Wix Corporation. All made to engine builder specs. Please pass the word. You might get somebody out of a pickle. Wix Corporation, Gastonia, North Carolina 28052.

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When you plan your next visit to an art museum-come to Chicago's Sherman House

Downtown hotel turned cultural? Not quite, but we do have a great new work of art.

Henri Azaz did a sculpture for our lobby. And when he creates—he doesn't kid around. We ended up—with a wall.

But not just any wall. Some people call it the Great Wall of Sherman House. Why not come see why?

And while you're there, stop in at any of our Nightspots—the College Inn, Well of the Sea, The Scuttlebutt, The Celtic and the Dome.

So come to Sherman House for entertainment and fun. And we'll throw in a little culture at no extra cost!

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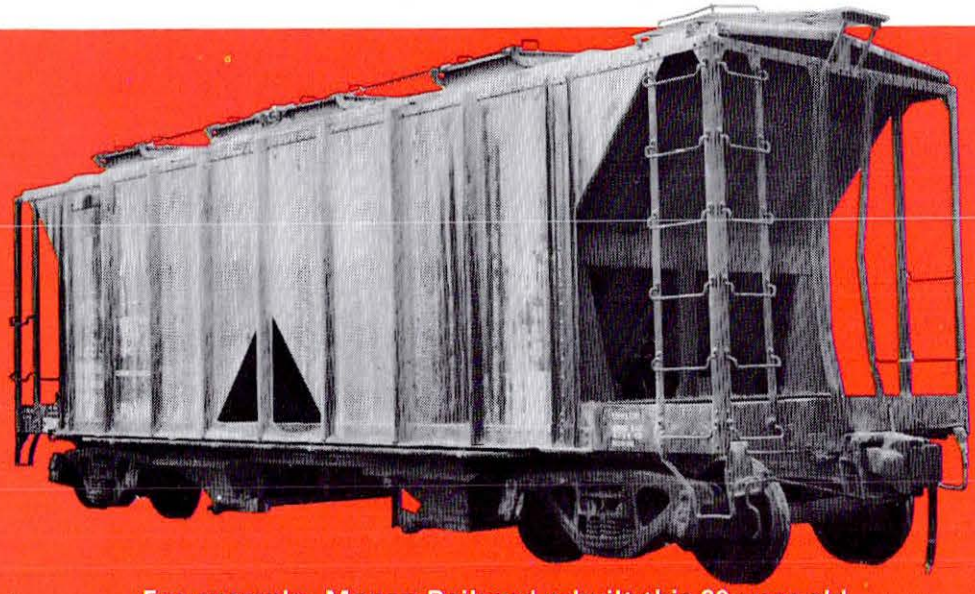
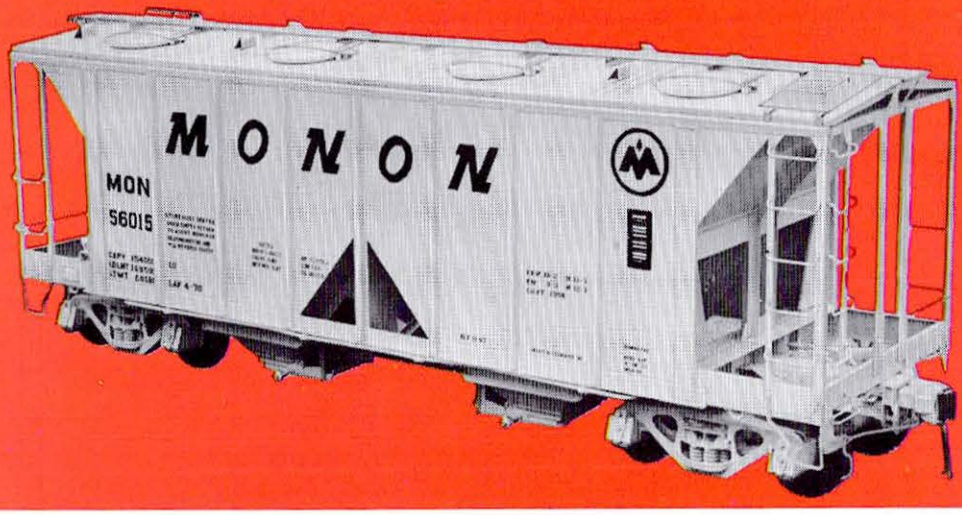
# Stanray roofs can make your hopper cars more profitable the second time around.



For example, Monon Railroad rebuilt this 20-year old square-hatch car with a Stanray round-hatch roof, a coat of paint and put it back in service, better than ever, at a great savings in time and expense.




Aside from the obvious savings incurred in rebuilding existing cars versus buying new ones, Stanray roofs can even make the rebuilding more profitable.

First of all, our roofs are corrugated. This corrugated design eliminates need for reinforcements. It also means lighter weight and a minimum of assembly work. Another way you save with Stanray is on long range protection. Our integral round-hatch roofs have an extremely low design which deters buildup of corrosive materials around the hatches. So, they'll hold up better over the years than the old-fashion high standing square-hatch roof.

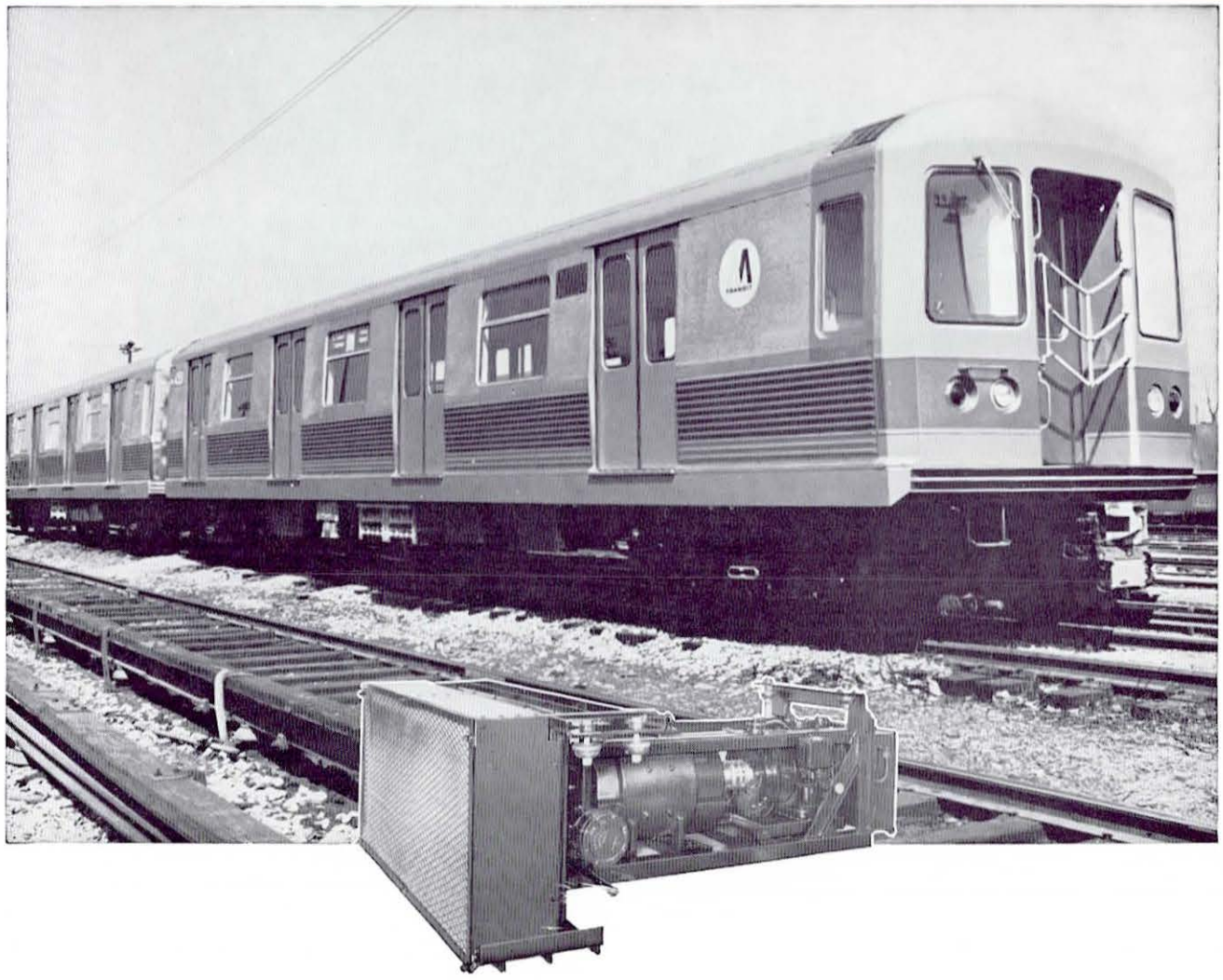
We'll custom build your roof as to material thickness and number of hatches and then give you the option to save additional money. If you wish, we'll ship your roof assembled, including running boards, or we'll knock it down and ship it so that your own people can assemble it.

See why more and more lines are learning that doing business with Stanray is a very profitable way to run a railroad?

**STANDARD RAILWAY EQUIPMENT**
**division of STANRAY CORPORATION**
Chicago • Hammond, Indiana

Circle 17 on coupon page 27

# "Safety" air conditioning: the system of the 70's



Over 600 "Safety" units keep things cool on these NYCTA cars. The component type air conditioning equipment consists of two independent systems, each rated 10-ton refrigeration capacity, which are regulated by a common temperature control unit. During operation, a mixture of filtered outside air and air recirculated from within the car is drawn into the overhead evaporator and blower units, conditioned, and diffused into the car body.

No air-conditioning system can perform more efficiently than its motors and related controls. We design our air-conditioning motors expressly for use on the nation's rapid transit and subway cars. This insures greatest possible dependability with economical, low-power consumption. Write us for details.

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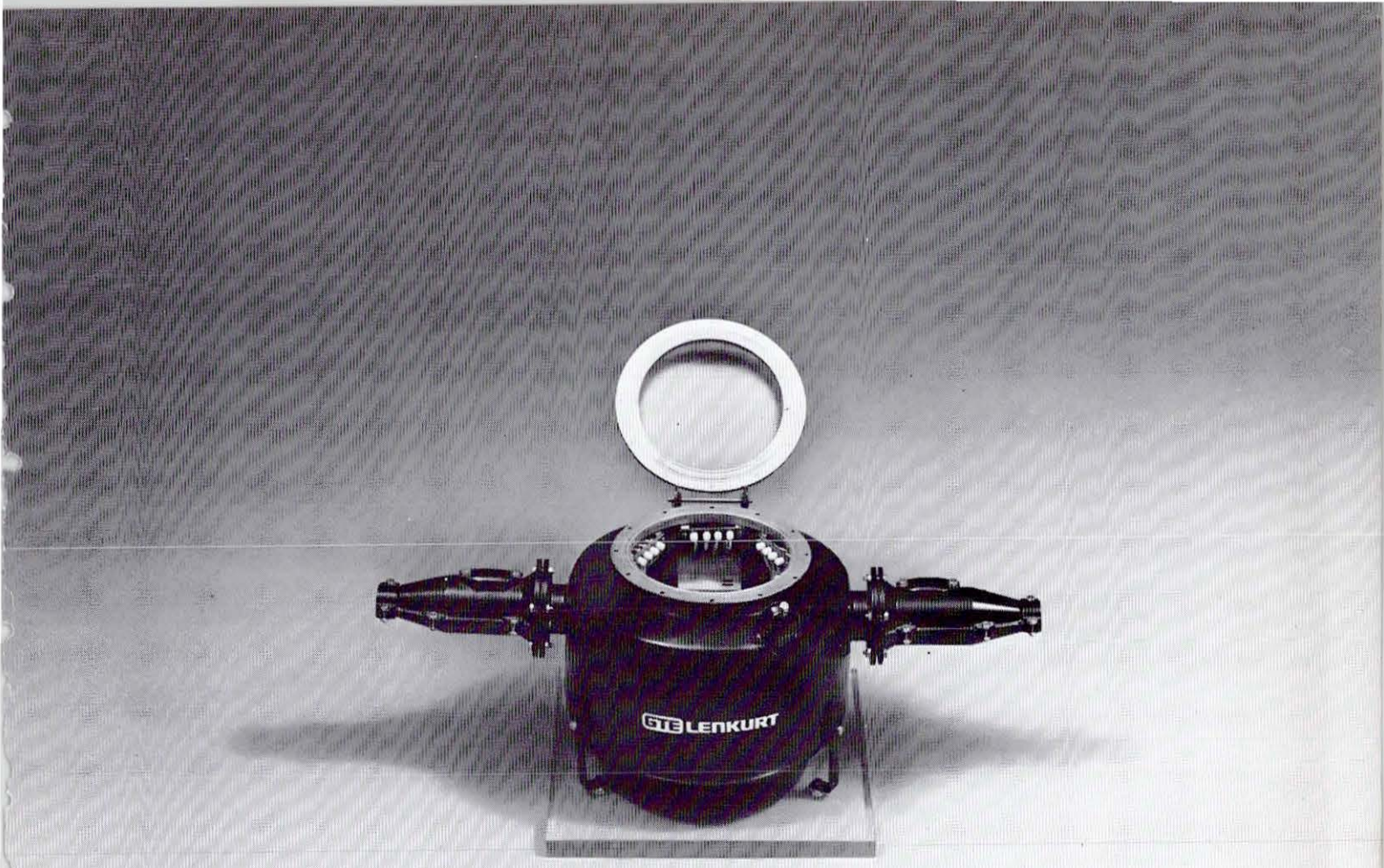


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## Our new 46V coaxial cable transmission system.

GTE Lenkurt's 46V coaxial cable transmission system is designed for long-haul, high-density communications systems and is also an economical system for applications such as entrance links and metropolitan bypass. The repeaters are designed for an average life of 50 years, making the 46V the most reliable system you can buy.

There's a lot more to know about the 46V. Three bandwidths are available, providing from 300 up to 2700 voice channels depending on the multiplex allocations used. The highest capacity system can transmit a color television channel and 1200 voice channels simultaneously. The 46V uses 0.174″ coaxial tubes for medium length systems and 0.375″ coaxial tubes for longer systems. The system also meets CCITT specifications. And the average noise on a typical system is 1.5 pWp/km, or less.

Designed by Siemens AG of Munich, Germany, and proven in installations throughout the world, the 46V has a unique repeater that compensates for the variations in cable attenuation as a function of cable temperature. These temperature-regulated repeaters provide a more economical repeatered-line with better data handling characteristics than possible if only pilot-regulated and fixed-gain repeaters are used.

The temperature-regulated and pilot-regulated repeaters have identical plug-in connectors for easy installation in compact underground housings. Wider bandwidth repeaters can be readily substituted to accommodate future needs. Or, just bury it and forget it.

Combined with GTE Lenkurt's new 46A3 Multiplex, the 46V offers you the most advanced, reliable coaxial cable transmission system available today.

If you'd like to know more about the 46V, and the 46A3 Multiplex, just phone: Atlanta (404) 261-8282/ Chicago (312) 263-1321 / Dallas (214) 363-0286/Falls Church (703) 533-3344 / San Carlos (415) 591-8461. Or write: GTE Lenkurt Incorporated, Dept. C720, 1105 County Road, San Carlos, CA 94070.

GTE LENKURT

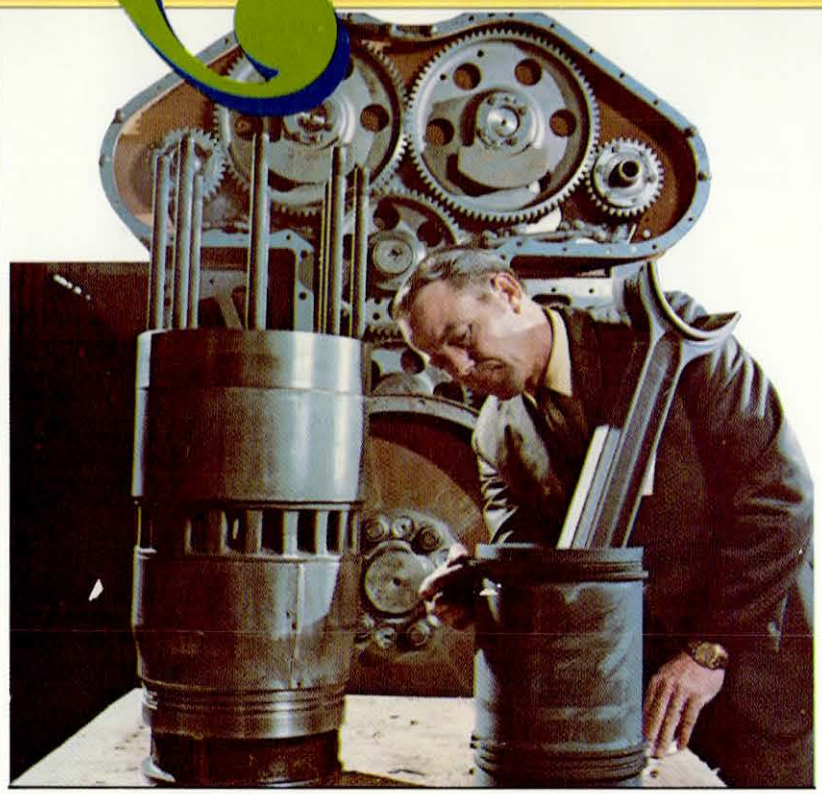
# LUBRICATION ENGINEERING NEWS

**New, improved railroad lubricants under development at mile-long Cities Service research center**

Cities Service Oil Company maintains an aggressive and continuing research and development program at the Cities Service Research Center complex near Princeton, New Jersey. Improved products for railroad applications, both on track and off, are under constant development and testing. Within the past two years alone, superior lubricants have been introduced for a number of different applications. In

many cases, these advanced railroad lubes have taken the place of two or more previous products and thus served to shorten the list of "required" lubricants in customers' inventories.

For information on specific products now under development and available for test application programs, drop a line to L. M. Fleming, Transportation, Sales Department, Cities Service Oil Company, Box 300, Tulsa, Oklahoma 74102.



## CITGO RD-836 Diesel Engine Oil Approved for General Electric "Superior Class II" Rating List

The promise of pulling more tonnage with fewer units and a resultant decrease in maintenance costs has remained little more than a promise in many cases. Higher horsepower diesel engines place greater demands on the crankcase oil and on those moving parts whose life depends on effective lubrication. Conventional high dispersant diesel lube oils just couldn't handle the load. Something better had to be developed.

That something better turned out to be CITGO RD-836, specifically formulated to get the maximum usage from each new high horsepower engine. RD-836 withstands more heat for longer periods; neutralizes greater amounts of acid; keeps oil filters and engine surfaces cleaner. Wear is reduced and oil life is significantly extended, resulting in less downtime and lower maintenance costs.

Thirteen major railroads are now using CITGO RD-836. In case after case, examination of pistons, rings and cylinders following thousands of hours of operation shows virtually no wear.

**Oustanding reserve alkalinity and stability**

Among the properties which enhance the performance capabilities of CITGO RD-836 diesel engine oil include excellent reserve alkalinity for extended TBN retention, very fine compatibility with other approved diesel engine oils and unusual stability. **Field tests have indicated this outstanding stability results in a drastic reduction of clutch slippage.**

CITGO RAILROAD LUBRICANTS EXCEED THE NEED.

CITGO

CITGO-TRADEMARK CITIES SERVICE OIL CO. SUBSIDIARY OF CITIES SERVICE CO.

In addition to these qualities, RD-836 also possesses exceptional anti-rust and anti-foam properties provided by special components in the additive package. The superior grade medium VI base stocks contribute exceptional oxidation stability and anti-wear protection along with good silver lubricity.

**Dispersant, detergent keep engine parts clean, filters free-flowing.**

An ashless dispersant and a detergent additive are key ingredients in CITGO RD-836 diesel engine oil. Designed to provide both longer service intervals and extended filter life, its high dispersancy permits the oil to flow readily through filter elements with a minimum of filter and oil cooler plugging. This is

particularly important in the lubrication of engines equipped with by-pass valves, where particles in the unfiltered oil could otherwise settle out and cause abrasive damage to bearings. **All these superior characteristics have helped CITGO RD-836 become one of the few lubricants to win a place on General Electric's "Superior Class II" rating list.**

**CITIES SERVICE OIL COMPANY**
(918) 560-2842, Box 300, Tulsa, Oklahoma 74102

CITIES SERVICE COMPANY

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# Market Outlook

## CARLOADINGS

Loadings of revenue freight in the week ended Sept. 25 totaled 513,738 cars, according to the Association of American Railroads. This was a decrease of 4,390 cars, or 0.8%, compared with the previous week, and a decrease of 38,311 cars, or 6.9%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended Sept. 25 are estimated at 14.7 billion, a decrease of 3.5% below the corresponding week of 1970.

REVENUE FREIGHT CARLOADINGS

| Commodity | Sept. 25 week | Sept. 18 week |
|---|---|---|
| Grain | 22,600 | 23,337 |
| Farm products | 12,512 | 10,757 |
| Metallic ores | 38,165 | 44,619 |
| Coal | 97,989 | 99,242 |
| Crushed stone, gravel & sand | 29,672 | 29,306 |
| Nonmetallic minerals | 10,495 | 9,913 |
| Grain mill products | 19,832 | 20,263 |
| Food & kindred products | 25,526 | 25,435 |
| Primary forest products | 23,950 | 24,449 |
| Lumber & wood products (except furniture) | 16,787 | 16,363 |
| Pulp, paper & allied products | 23,503 | 23,073 |
| Chemicals & allied products | 26,540 | 25,988 |
| Petroleum products | 9,296 | 9,264 |
| Stone, clay & glass products | 20,610 | 21,462 |
| Coke | 6,164 | 5,670 |
| Metals & products | 19,295 | 18,833 |
| Motor vehicles & equipment | 24,767 | 23,862 |
| Waste & scrap materials | 13,481 | 13,556 |
| Forwarder & shipper assn. traffic | 6,596 | 6,508 |
| All other carloads | 65,351 | 65,626 |
| LCL traffic | 607 | 602 |
| Total cars loaded | 513,738 | 518,128 |

| CUMULATIVE TOTAL, 39 weeks | 1971 | 1970 | 1969 |
|---|---|---|---|
| | 19,344,113 | 20,447,049 | 20,986,696 |
| Estimated revenue ton-miles (billions) 39 weeks | 559.8 | 573.0 | 569.9 |

## PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended Sept. 18 totaled 24,439 cars (3.7% below the corresponding week last year) and 41,595 trailers or containers (up 4.0% over 1970). Cumulative volume for the first 38 weeks of 1971 is 857,817 cars (off 6.9% from last year) and 1,401,590 trailers or containers (down 5.7% from 1970). In addition to freight, 2,838 cars carrying 4,421 trailers or containers of mail and express traffic were handled piggyback. Cumulative figures for the first 38 weeks of 1971 are 115,144 cars (down 12.4% from the 1970 total), and 173,594 trailers or containers (down 13.9% from 1970).

## IN CANADA

| 7-days ending | Revenue Cars Loaded | Cumulative Totals |
|---|---|---|
| Sept. 14, 1971 | 81,356 | 2,700,108 |
| Sept. 14, 1970 | 76,518 | 2,679,678 |

## FREIGHT-TRAIN CARS

● *Trailer Train.*—Ordered 25 89-ft, 4-in. low-level cars from Pullman-Standard. This brings to 569 the number of cars ordered by TTX since Jan. 1. As of Sept. 24, TTX had 59,148 cars in service or on order.

● *Orders and deliveries.*—Orders were placed for 1,211 new freight cars in August, compared with 3,807 in July and 2,148 in August 1970. New cars on order and undelivered on Sept. 1 totaled 26,429, compared with 28,547 on Aug. 1 and 25,782 on Sept. 1, 1970.

### FREIGHT TRAIN CARS ORDERED AND DELIVERED AND BACKLOG OF ORDERS

**DELIVERED**

| | Aug. 1971 | July 1971 | Aug. 1970 |
|---|---|---|---|
| Built new by carbuilders | 2,852 | 2,696 | 4,127 |
| Built new in R.R. shops | 477 | 609 | 1,037 |
| Built new—total | 3,329 | 3,305 | 5,164 |
| Rebuilt | 287 | 988 | 681 |
| **TOTAL DELIVERED** | **3,616** | **4,293** | **5,845** |

**ORDERED**

| | | | |
|---|---|---|---|
| To be built new by carbuilders | 1,211 | 3,652 | 2,148 |
| To be built new in R.R. shops | 0 | 155 | 0 |
| To be built new—total | 1,211 | 3,807 | 2,148 |
| To be rebuilt | 275 | 100 | 0 |
| **TOTAL ORDERED** | **1,486** | **3,907** | **2,148** |

**ON ORDER AND UNDELIVERED**

| | Sept. 1, 1971 | Aug. 1, 1971 | Sept. 1, 1970 |
|---|---|---|---|
| To be built new by carbuilders | 22,639 | 24,280 | 20,853 |
| To be built new in R.R. shops | 3,790 | 4,267 | 4,929 |
| To be built new—total | 26,429 | 28,547 | 25,782 |
| To be rebuilt | 2,331 | 2,343 | 5,123 |
| **TOTAL ON ORDER** | **28,760** | **30,890** | **30,905** |

● *Bad order drops.*—Class I roads on Aug. 1, 1971, owned 1,429,681 freight cars, 3,027 fewer than on Aug. 1, 1970, according to AAR report summarized below. Bad order ratio was 0.2% below last year.

| | Aug. 1, 1971 | Aug. 1, 1970 | Change |
|---|---|---|---|
| Car ownership | 1,429,681 | 1,432,708 | —3,027 |
| Waiting repair | 77,640 | 80,840 | —3,200 |
| Repair ratio | 5.4% | 5.6% | —0.2% |

## NEW FACILITIES

● *General Railway Signal.*—GRS is furnishing a new control machine for the Northeast Interlocking Tower at New Orleans (La.) Terminal. It will control an interlocking used jointly by the Southern and the Louisville & Nashville. The machine—expected to be in service by next December—will consolidate functions of three previous machines, controlling ten switch locations by Type J code system and two by direct wire.

GRS is also supplying equipment to modernize facilities on the Penn Central, Burlington Northern and the Houston Belt & Terminal. PC is modernizing two interlockings in New York City; they will be controlled from a Traffic Master console by System 4000, the GRS high-speed, solid state code system. A turnout is being installed by the HB&T in Houston. At Missoula, Mont., the BN will add facilities to an existing GRS control console to control locations at Helena Junction, Garrison and Garrison Wye.

● *Seaboard Coast Line.*—Awarded a $1.5-million contract to Cowin & Co. for enlarging a tunnel near Rockmart, Ga. The increased clearance of the 700-ft-long tunnel will enable SCL to handle larger shipments through the Birmingham gateway to and from Georgia, the Carolinas, Virginia and points in the east.

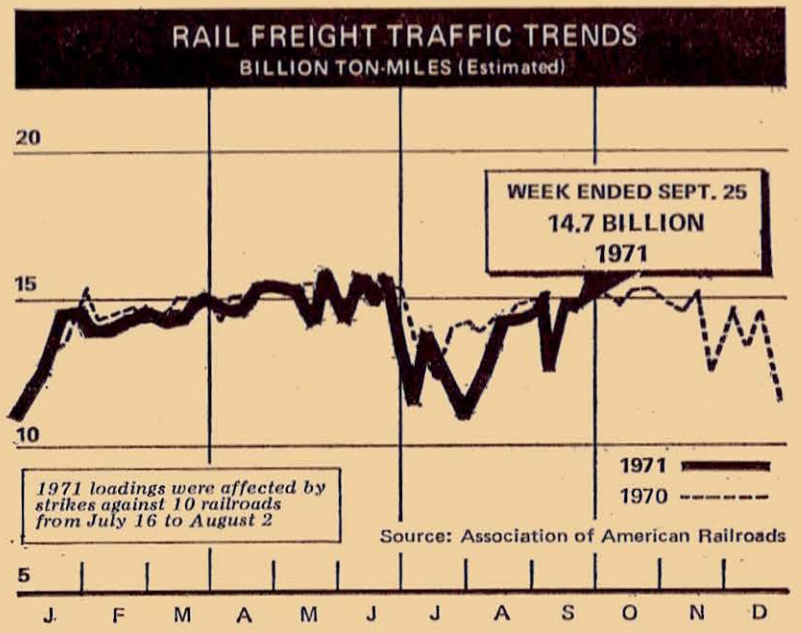
## LOCOMOTIVES

● *CP Rail.*—Ordered 40 3,000-hp, four-axle freight locomotives from the diesel division of General Motors of Canada at a cost of $17 million. The units, to be delivered between June and September 1972, will augment the existing fleet in main line service between Montreal, Toronto and Calgary. CP's freight traffic has reached an all-time high and is expected to set a new ton-mile record in 1971. CP's 880 freight units are already used to capacity and have been supplemented with 12 leased units; 28 more are scheduled to be leased. Before delivery of the 40 new locomotives, GM will deliver 24 six-axle, 3,000-hp units for unit-train coal service in British Columbia.

### SELECTED FREIGHT AND PASSENGER STATISTICS CLASS I LINE-HAUL RAILROADS

| YEAR | Car Miles: Freight service (millions) | Car Miles: Passenger service (thousands) | Revenue ton miles (billions) | Revenue passenger miles (millions) | Average load per freight car (tons) |
|---|---|---|---|---|---|
| 1955 | 31,153 | 1,601,792 | 623.6 | 28,525 | 32.1 |
| 1956 | 31,559 | 1,553,228 | 647.1 | 28,184 | 33.0 |
| 1957 | 30,680 | 1,435,776 | 618.2 | 25,884 | 33.4 |
| 1958 | 28,059 | 1,251,591 | 551.7 | 23,269 | 33.0 |
| 1959 | 28,590 | 1,166,916 | 575.5 | 22,047 | 33.3 |
| 1960 | 28,158 | 1,101,021 | 572.3 | 21,257 | 34.0 |
| 1961 | 27,189 | 1,019,227 | 563.4 | 20,283 | 34.7 |
| 1962 | 27,743 | 996,403 | 592.5 | 19,905 | 35.7 |
| 1963 | 28,126 | 943,443 | 621.7 | 18,497 | 37.1 |
| 1964* | 28,886 | 955,140 | 658.6 | 18,248 | 38.4 |
| 1964* | 28,732 | 951,983 | 655.5 | 18,187 | 38.3 |
| 1965 | 29,335 | 884,972 | 697.9 | 17,389 | 39.7 |
| 1966 | 30,373 | 838,015 | 738.3 | 17,095 | 41.0 |
| 1967 | 29,659 | 729,686 | 719.4 | 15,201 | 41.9 |
| 1968 | 30,086 | 581,099 | 744.5 | 13,120 | 42.6 |
| 1969 | 30,344 | 488,697 | 767.9 | 12,169 | 43.5 |
| 1970 | 29,929 | 414,099 | 762.5 | 10,770 | 44.9 |

*Definition of Class I railroads changed in 1965.
Source: Bureau of Accounts, ICC.




**NEW ORDERS FOR MACHINE TOOLS***

| | August 1971 ($000) | August 1970 ($000) | 8 mos. 1971 ($000) | 8 mos. 1970 ($000) |
|---|---|---|---|---|
| Metal cutting tools | 60,800 | 34,200 | 388,050 | 501,750 |
| Metal forming tools | 18,100 | 12,500 | 162,800 | 159,450 |

**MACHINE TOOL SHIPMENTS***

| | August 1971 ($000) | August 1970 ($000) | 8 mos. 1971 ($000) | 8 mos. 1970 ($000) |
|---|---|---|---|---|
| Metal cutting tools | 40,800 | 62,150 | 453,050 | 697,200 |
| Metal forming tools | 22,250 | 30,400 | 215,800 | 312,450 |

**Including foreign and domestic.*
*Source: National Machine Tool Builders' Association.*

# Viewpoint

## Santa Fe attacks the L&D problem

The whole railroad industry—as well as anybody who ships or receives a car of freight—has a multi-million-dollar stake in what's happening these days at Santa Fe. Specifically, the industry and its customers had better hope that Santa Fe's new Quality Control Department is a howling success.

Consider for a moment the grim arithmetic. The industry's freight-loss-and-damage payout last year was $228.3 million, up 8.7% from 1969 figures. And thus far in 1971, the trends are again running in the wrong direction. AAR figures show payout of $82.8 million for the first four months of '71, up 10.2% from the same period of 1970. For the 12 months ended with April 1971, the total was $236 million, up 9.1% from the preceding 12-month period.

In a total sense, nothing that has been tried seems to help much. Payout totals keep going up and up. And, unbelievable as it may seem, every once in a while one detects an atmosphere of boredom and apathy where L&D is concerned. Maybe too many people have simply become too accustomed to regarding L&D payout as normal.

If anybody is thinking along those lines at Santa Fe, though, he had better polish his resume and start reading the want-ads. As Vice President-Operations Larry Cena puts it, "We have made a commitment at the very top level of Santa Fe management—namely by our president, John Reed—to whip this problem."

At Santa Fe, the quality control emphasis is in four areas—equipment condition and preparation, the actual physical handling of cars, delays en route, and derailments. Cena is the first to admit that what his road is actually doing is not all that different from what other roads have done—with one exception, "and that exception is commitment."

### "THE BOSS MEANS BUSINESS"

An example and an analogy might illustrate what "commitment" means. First, the example: Santa Fe, like any other road, makes use of impact recorders. But in the time-honored way of handling recorder data, it might well be weeks before the crew involved or its supervisor were asked to recall and explain a bad reading. Under the QCD's new setup, the time lag is gone. Says Cena: "There are going to be some superintendents, trainmasters and yardmasters getting a call direct from Chicago asking about an impact that may have happened the day before or even six hours before, not six weeks before. And some of those calls are going to come from Larry Cena. It's not really necessary for me to follow through personally, perhaps—but I want the word to spread rapidly that the boss in Chicago means business about stopping over-speed impacts." Next, the analogy: Several years ago, Santa Fe had a personal-injury safety record which was less than noteworthy for its excellence. But in two years, Santa Fe went from 19th to first in its industry classification—and the improvement all started with top-level commitment. That improvement, Cena declares, "happened because our people knew management meant business and provided the tools to get the job done."

What about QC? Results in the new program, Santa Fe's VPO promises, "may not come so dramatically—but they'll be there."

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The Bureau already has formal arrangements with about a third of the Class I railroads, and, with many industrial and other short-line roads. The completion of four-year courses qualifies apprentices as journeymen. Some roads use accelerated programs, turning out skilled machinists, electricians, carmen, car inspectors and other craftsmen in as little as three years. In the case of especially responsive students, two years is sufficient for the regular four-year course. Many other railroads use shorter REB courses for upgrading and refreshing. The Bureau also offers four two-year courses, as follows: Locomotive Engineers, covering diesel-electric equipment and air brakes; Locomotive Electrical Equipment; Locomotive Mechanical Equipment; and Car Inspectors and Carmen.

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Write now, or phone, Reid Kenedy, Railway Educational Bureau, 1809 Capitol Ave., Omaha, Nebr. 68102, telephone (402) 341-7889.

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## SUPPLY TRADE

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**James E. Norris,** vice president, manufacturing, **Pullman-Standard Division** of **Pullman Incorporated,** has been appointed vice president, operations.

**Stanley D. Christianson,** treasurer-controller, **Thrall Car Manufacturing Co.,** has been promoted to vice president and treasurer.

**Joseph S. Cabala** has been named director of purchases, **The Youngstown Steel Door Co.**

**Midland-Ross Corp.** has licensed **Commonwealth Steel Co., Ltd.,** Waratah, New South Wales, Australia, and **Talleres Electrometalurgicos S.A.,** Buenos Aires, Argentina, to manufacture railroad and automotive products based on the Midland-Ross patents and manufacturing technology. An agreement has been renewed with the **Canadian Steel Foundries Division, Hawker Siddeley Canada, Ltd.,** Montreal, Que., for production and sale of rotary couplers.

**Benjamin B. Lefton** has been appointed area field director, rail dismantling operations, **Lefton Iron & Metal Co.,** East St. Louis, Ill. **Ralph L. Kraft** has been promoted to marketing director, Rail Division.

**Tom Macku** has joined the Service Department of **American SAB, Inc.,** Chicago.

**James M. Mulligan,** assistant to the president, **REALCO Services, Inc.,** has been appointed director of administrative services.

**Donald E. Selby** has been named sales engineer, **Transportation Systems Division, Vapor Corp.,** at Atlanta, Ga.

**John Hoover** has been appointed eastern district sales manager, **Union Tank Car Co.**

**William H. Peters** and **Thomas W. Welker** have been appointed assistant vice presidents, **Camel Sales Co.,** with headquarters in Chicago. Mr. Peters was formerly sales manager-western division, **Fruehauf Railcar Division, Fruehauf Corp.,** Chicago. Mr. Welker was a staff member of the purchasing department, **Youngstown Steel Door Co.,** parent company of **Camel Sales.**

## OBITUARY

**Edgar W. Hyatt,** 58, passenger traffic manager, Transportation and Communications Service, **General Services Administration,** died Sept. 28 at George Washington University Hospital.

**Karl F. Long,** 61, president of **International Car Co.,** Buffalo, N.Y., died Sept. 26.

**E. C. Meinholtz,** retired mechanical engineer, **Missouri Pacific,** died recently at his home near St. Louis.

**Patrick J. Rice,** 43, regional manager-freight sales, **Rock Island,** New York, died Sept. 30 in Westwood, N.J.

**Owen J. Wathan,** whose promotion to general foreman, locomotive department, **Bessemer & Lake Erie,** Greenville, Pa., was noted in RA, July 13, P. 48, died recently.


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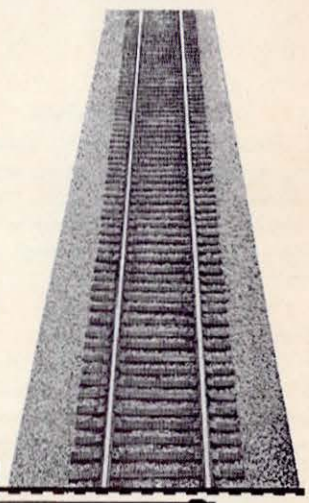

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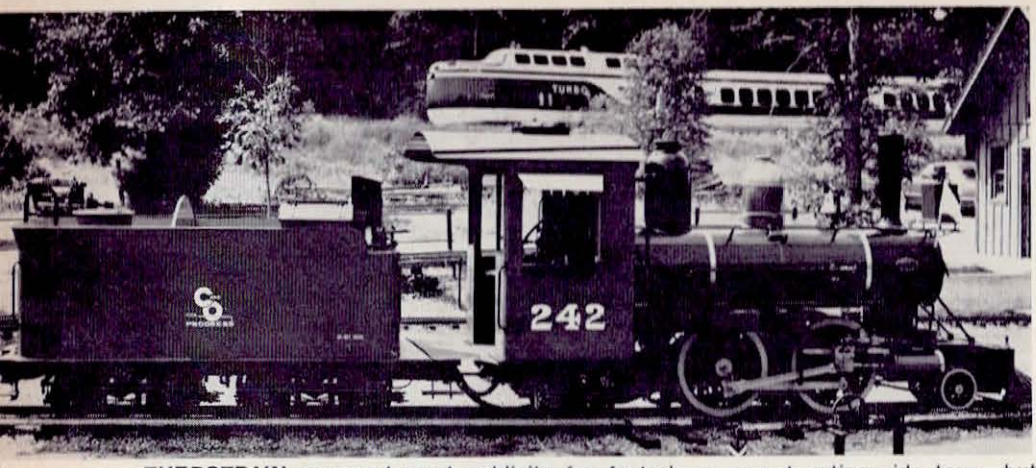


**TURBOTRAIN** garnered good publicity for Amtrak on recent nation-wide tour—but since then news of deepening financial troubles has tarnished Amtrak's image. Above, the TurboTrain glides past replica of 1893 Columbia-type locomotive built at Wisconsin Dells, Wis., for Chicago's Brookfield Zoo.

# Amtrak: Still deep in the financial woods

Amtrak, to the surprise of almost nobody, is in deep financial trouble. As a result, the Department of Transportation, with the reluctant blessing of the Office of Management and Budget, will soon ask Congress for a $170-million transfusion of tax dollars for the quasi-public corporation.

Sen. Vance Hartke (D.-Ind.) and Rep. Brock Adams (D.-Wash.) reportedly will introduce the request. The new money is supposed to help keep Amtrak going through June 30, 1973; there is a strong likelihood that supplementary appropriations will be requested after that.

OMB's blessing came as a surprise, because the President's budget-makers viewed Amtrak's creation with foreboding in the first place—and correctly, from their point of view. While there is little doubt that Congress will appropriate new money, there is also little doubt that Congress will exact its price: probably some more juggling of routes.

Amtrak had wanted $260 million over two years in new aid. This figure was pared to $170 million, because OMB felt that by the time Congress appropriated the money fiscal year 1972 would be at least half over (if Congress dallies, the amount could be reduced still more).

At the time of its creation, Amtrak received $40 million as an outright Federal grant and a further $100 million in Federal loan guarantees. It has not yet drawn on the latter. (In addition, Amtrak can issue 6% cumulative preferred stock at a par value of $100 per share: no one is very bullish about it). In further input, Amtrak will receive over three years about $197 million from the 20 rails who joined its passenger system. Offsetting this amount is the money Amtrak pays the 20 roads to operate its trains. (Penn Central, for one, would like Amtrak to raise its PC payment by $34.1 million in 1972.)

Amtrak so far has been very tight-lipped about its cash-flow, not even allowing ICC to inspect its records. It is known that Amtrak spent about $4 million in startup costs and $16.8 million to acquire equipment. Amtrak must send its first annual report to DOT and Congress on Oct. 30 and this report presumably will reveal all, or almost all, of the corporation's problems.

Amtrak at the outset projected a deficit of about $100 million a year for its first two years. Unconfirmed reports now suggest that the deficit is running in excess of $150 million a year.

As of Oct. 1, Amtrak President Roger Lewis, in an interview with Railway Age, preferred not to talk in dollar specifics, because of the uncertainties still involved. But he did confirm that Amtrak has been talking with government officials about a financial transfusion. And he did advise that, in addition to its concern over operating deficits, Amtrak's financial needs include a "substantial" sum for equipment, presumably including new locomotives and at least a "commitment" toward purchase of new passenger cars.

Lewis would not agree that "serious financial condition" was an accurate description of Amtrak's position. But he did say that (1) Amtrak's operating ratio was "not very favorable," and (2) there was a realization at the outset that initial funds provided "only a start."

In the first five months of operation, Amtrak has offered few statistics which would permit comparisons with pre-Amtrak figures or which would indicate how Amtrak itself has done in five months of operations. It is indicated, however, that patronage rose in June and July, leveled off in August, and may have dropped to May levels in September, after the Labor Day holiday.

Meanwhile, Lewis made these other points about Amtrak and where it stands:

—While Amtrak is planning to acquire a 1,200-car fleet from member roads, those cars "won't last forever." Consequently, the corporation has been talking with potential builders, domestic and foreign. Amtrak wants a dialogue with the manufacturers. And it wants them to know that anybody wanting Amtrak business "will have to go after it."

—Amtrak is in the process of setting up its car service/maintenance/repair network. Selection is expected to be on a bid basis.

—President Nixon's wage/price freeze caught Amtrak with a new tariff setup almost completed but not implemented. New rates would have had both increases and decreases (and roundtrip fare reductions would have been eliminated). Under the proposed schedule, total revenues would not have been affected much one way or the other. But fares would have been set up on a grid structure, point-to-point, with resulting simplification of fare calculation.

—Amtrak does have a fairly ambitious schedule-addition-and-improvement plan in the works, for inclusion in a mid-November timetable. One area that will be getting better service: Washington-Boston. Among the things that have been particularly pleasing to Lewis in Amtrak's first five months has been an increase in Metroliner patronage.

—Amtrak people (and all key positions have now been staffed) remain convinced that there is a place in American society for a viable rail passenger service. But it is going to take some time to determine exactly what and where that place is. Amtrak was handed its original network (which it must operate for two years) and has added certain routes under a setup providing for two-thirds support from the areas involved. But Amtrak people are the first to admit that a post-1973 network might look quite a bit different from the 1971 network. ■

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It may seem incredible that a prescription would be recommended and then withheld.

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In fact, other modes of transportation support the railroads' plea for a new and realistic policy that would provide for rapid abandonment of unnecessary and uneconomical railroad lines.

Twenty-five years ago, the question of maintaining unnecessary railroad lines might have been academic. In those days, a healthy railroad industry could underwrite such deficit services.

Today, it is no longer academic. For today the railroads face a crisis for survival.

It is also a crisis for our entire transportation system, and for the economy itself.

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